The Bulletin

of the

American Association of Nurse Anesthetists

MAY

1944

VOLUME XII NUMBER 2

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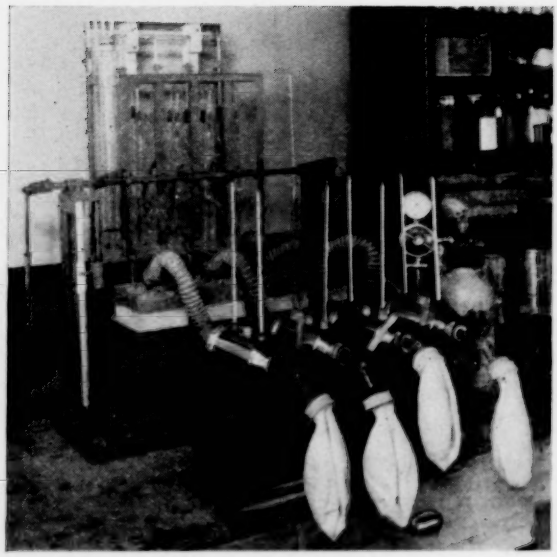

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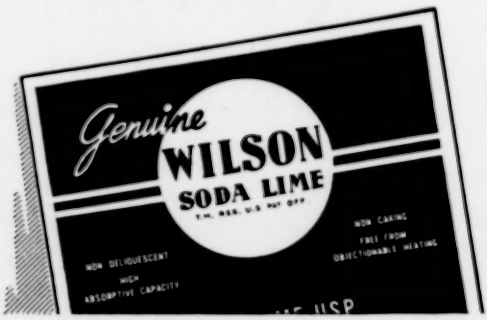

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BULLETIN OF THE AMERICAN ASSOCIATION OF NURSE ANESTHETISTS

The Bulletin is published at 2065 Adelbert Road, Cleveland 6, Ohio.

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Manuscripts. — Manuscripts should be typewritten on one side of the paper only, with double spacing and liberal margins. References should be placed at the end of the article and should conform to the following style: viz., name of author, title of article, and name of periodical with volume, page, and year.

Illustrations accompanying manuscripts should be numbered, provided with suitable legends, and marked on margin or back with the author's name. Authors should indicate on the manuscript the approximate position of text figures.

Illustrations — A reasonable number of half-tones will be reproduced free of cost to the author, but special arrangements must be made with the Chairman of the Publishing Committee for elaborate tables or extra illustrations.

Reprints. — Fifty or more reprints may be obtained at a nominal cost if ordered within fifteen days following the date of publication of the Bulletin.

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The Bulletin of the American Association of Nurse Anesthetists

VOLUME XII, NO. 2 MAY, 1944

THE CONTENTS

PAGE

Twelfth Annual Meeting 50
In Memoriam 54
"Anesthesia in Orthopedics" — Byron S. Talley, M.D. 55
"Nitrous Oxide Anesthesia in Thoracoplasty" — Margaret T. Goode 59
"Taming Curare for Anesthesia" — H. Sidney Newcomer, M.D. 61
"The Cold Disinfection of Rubber Airways"
A. G. Bowers and R. I. Seitz 65
"Ethyl Chloride" — Evelyn Y. Buferd 67
"Anesthesia for Gallbladder Operations" — Katharine King Nesbit 71
"My Assignment as a Red Cross Nurse" — Gertrude Madley 73
Report from Headquarters — Anne M. Campbell 82
Activities of State Associations 85

Advertisers:

Dewey and Almy Chemical Company 46
Linde Air Products Company 96
Liquid Carbonic Corporation ..... Inside back cover
McKesson Appliance Company 45
Merck & Company 95
Ohio Chemical & Mfg. Company ..... Outside back cover
Puritan Compressed Gas Corporation ..... Inside front cover
E. R. Squibb & Sons 47
Union Carbide and Carbon Corporation 96

BUY WAR BONDS

TWELFTH ANNUAL MEETING

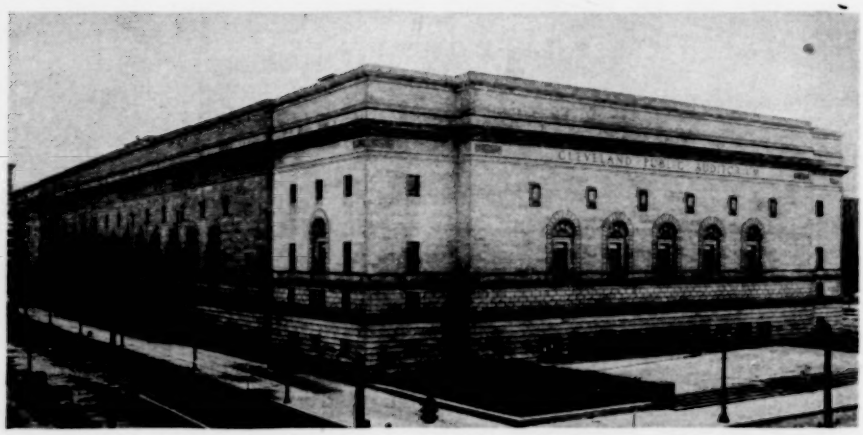
OF THE

AMERICAN ASSOCIATION OF NURSE ANESTHETISTS

WILL BE HELD IN CONJUNCTION WITH THE CONVENTION OF THE AMERICAN HOSPITAL ASSOCIATION

OCTOBER 2-5, 1944,

AT CLEVELAND, OHIO



CLEVELAND PUBLIC AUDITORIUM

Hotel Headquarters will be at the Hotel Hollenden, corner of East Sixth Street and Superior Avenue, N. E.

All meetings will be held in the Cleveland Public Auditorium, which is located just two short blocks from the hotel, not more than five minutes' walk.

MAKE HOTEL RESERVATIONS EARLY, addressing your request for reservation to The Housing Committee, American Hospital Association, 1504 Terminal Tower, Cleveland, Ohio.

The Convention Arrangements Committee includes Myra Van Arsdale, Janet McMahon, Lucy Richards, Ann Dickerson, Frances Kocklauner, Lou E. Adams, Myrn Momeyer, Aida Allwein and Gertrude Fife.

Among the speakers on the program will be the following members of the faculty of Western Reserve University Medical School: Torald Sollmann, M.D., Dean of the Medical School and Professor of Pharmacology and Materia Medica; Harold Feil, M.D., Assistant Clinical Professor of Medicine; Samuel O. Freedlander, M.D., Assistant Professor of Surgery; Harold David Green, M.D., Associate Professor of Physiology; and John Swee-

ney, D.D.S., Professor of Anesthesia and Oral Surgery at Western Reserve University School of Dentistry; also Marian Hollister, anesthetist on the Maternity Division of the University Hospitals of Cleveland for nine years. Other nurse anesthetists have been invited to speak but as yet acceptances are not in.

An interesting feature this year will be the presentation of difficult and unusual cases. A report of an anesthetic given to a child two and a half years old, operated upon for mediastinal tumor, will be given by Frances Kocklauner. One death from avertin will be reported, and one instance of pentothal being injected into the artery instead of the vein.

ANY ANESTHETIST WHO HAS A CASE SHE WOULD LIKE TO PRESENT, PLEASE WRITE IMMEDIATELY TO GERTRUDE L. FIFE, 2065 ADELBERT ROAD, CLEVELAND 6, OHIO.

The banquet will be held at the Hotel Hollenden on Tuesday evening, October 3. Mr. Louis B. Seltzer, Editor of the Cleveland Press, will be the guest speaker — his subject, "Life Under Pressure." Mr. Seltzer is well known as an outstanding speaker. He is a man who has much to offer, and we hope that all those attending the convention will be present at the banquet.

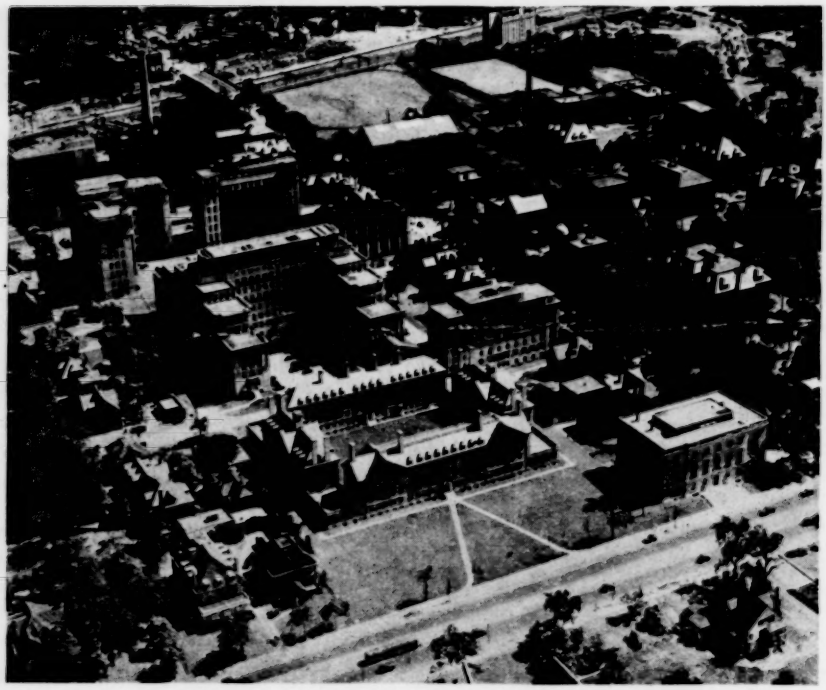
On Monday, October 2, the Alumnae Association of the University Hospitals School of Anesthesia will hold a tea at the Hotel Hollenden. All members attending the convention are invited.

WHY YOU SHOULD ATTEND THE ANNUAL MEETING

There is a shortage of anesthetists in civilian hospitals and there is also a great need for anesthetists in the armed forces, but in spite of this the anesthetists are urged to attend the annual meeting in October if at all possible. If this meeting were not considered essential for present and post-war planning, the Government would not allow it to be held, and neither would the hospital association plan such activities. Leaders in the hospital field are doing everything they can to further the war effort, and in the face of extreme difficulties they are trying to maintain high standards and give the patient adequate care during this emergency.

We cannot hope to solve our problems individually—we must discuss with one another the best way to meet the new situations that are arising, and we must make plans as an Association for our post-war activities. Therefore, for the good of the institution in which you are employed; for the help that you personally will receive in discussing with others the problems of these times; and particularly for the personal satisfaction you will obtain in helping to solve the great problems that confront the Association—plan to attend this meeting. Keep the nurse anesthetists going forward and let us on the home front protect the interests of our members who are with the armed forces abroad.

The nurse anesthetists did such fine, outstanding work during the last war that it was soon recognized that the nurse anesthetists had a definite place in hospital service. We are organized today and the value of nurse anesthetist service is appreciated everywhere, consequently each of us has a responsibility, not only to see that our work is outstanding in our own institution, but that we are progressive and take an interest in the activities and



AIR VIEW UNIVERSITY HOSPITALS OF CLEVELAND

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Gentlemen:

Please reserve for me beginning October ——, 1944, for —— days,

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for annual meeting American Association of Nurse Anesthetists.

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plans that are being made by other allied groups, and that we protect our own organization by giving thought and study to the future of our profession.

Hospital superintendents are overworked and while they know that there is going to be an anesthetists' meeting, yet very often they are far too busy to call the anesthetist and ask her if she is planning to attend. It is up to her to discuss with him her attendance at this meeting, and we are sure it will not be necessary to point out to him the benefits.

The American Association of Nurse Anesthetists having been organized in Cleveland, the Cleveland anesthetists are very proud of its growth and influence in the field, therefore a great deal of effort is being put forth by the Cleveland group to arrange a varied, interesting and educational program.

If there are any nurse anesthetists who would like to contribute a paper for the program, please do not hesitate to convey to the Chairman your desire. Any suggestions to make the program more interesting will be greatly appreciated.

Make your hotel reservations *early*, and be sure to state when you write for reservations that you are an anesthetist. This will help the Housing Committee and will give us some idea of the number of anesthetists planning to attend.

CLEVELAND — THE CONVENTION CITY — 1944

On June 17, 1931, a small group of anesthetists, at the call of Miss Agatha C. Hodgins, met in the Anesthesia Department at the University Hospitals of Cleveland, and organized the National Association of Nurse Anesthetists (now the American Association of Nurse Anesthetists).

In September, 1936, this same group, having grown from a few score members to a membership of over eleven hundred, again gathered in Cleveland for its fourth annual meeting. At that time the national headquarters of the organization were located in Cleveland and there were fourteen organized state associations.

On October 2, 1944, the American Association of Nurse Anesthetists will again convene in Cleveland, now grown to approximately three thousand members, with thirty organized state groups. Hundreds of its members are serving in the armed forces in this country and abroad—in Alaska, Africa, Australia, Italy, India, Persia, Sicily and the South Seas—everywhere on the far-flung battle line. National Headquarters are maintained in Chicago and a broad educational program is under way.

Cleveland, the sixth city, has been the host of many of the largest conventions in the country. Its climate is tempered by lake breezes. It is beautified by an extensive metropolitan park system ninety miles in length, with fifteen thousand acres of grounds. It includes several spacious parks on the shores of Lake Erie, with deep ravines, waterfalls, fine old forests and huge rock formations on the shore line. Cleveland affords numberless opportunities for amusement and relaxation, including one of the largest sport arenas in the world and a mammoth stadium on the lake front. There is swimming both in spacious pools and at the lake beaches. Manikiki is one of the most picturesque golf courses to be found anywhere, to mention but one. Interesting boat excursions may be arranged to one of the many pleasure resorts dotting the shores of the lake.

Cleveland is an outstanding cultural center, with two great universities, a high-ranking technical school, numerous colleges and preparatory schools and schools of art and music. Western Reserve's Schools of Medicine, Dentistry, Pharmacy and Nursing are affiliated with the University Hospitals group and this great medical center has placed the city among the world's leaders in medical science.

One of the interesting features at John Carroll University is the seismological laboratory, with records of practically every tremor observed on the earth's surface for the last thirty years. The Cleveland Mu eum of Art is one of the most beautiful buildings of its kind in America. The Museum of Natural History houses many fine educational displays. Dunham Tavern Museum is one of the city's oldest buildings and its rooms are furnished in keeping with its period. Severance Hall, just across from Western Reserve University campus, is the $2,500,000 home of the Cleveland Orchestra.

Warrensville Farm, covering two thousand acres of high ground, founded for charitable and corrective purposes, is a concrete example of the civic spirit of Cleveland. This great experiment has brought many students of social welfare to Cleveland. Cleveland's 1020-acre airport is the largest municipally owned aviation field in the country. At night planes may be seen landing and taking off by the light of a 500,000,000 candle power flood light.

The Convention Auditorium is the world's finest—a $15,000,000 plant. It is located in the heart of the downtown district within easy walking distance of all principal hotels and shops. Nothing essential to comfort has been overlooked in this colossal Public Hall.

In Memoriam

Miss Alma Fossum, who had been a member of the Association since 1934, died February 21, 1944, at the hospital in Estherville, Iowa. Miss Fossum was graduated from the Lakeside School of Anesthesia of Cleveland in 1929 and at the time of her last illness was employed in anesthesia at the Chicago Lying-In Hospital.

ANESTHESIA IN ORTHOPEDICS

BYRON S. TALLEY, M.D.

*Memphis, Tennessee**

Anesthesia in orthopedic surgery, as well as in any branch of surgery, presents the problem of the choice of the drug. The ultimate safety of the patient is the chief factor influencing the choice of the agent. The anesthetic agent best suited for a given case is an individual problem. We cannot say that a certain anesthetic agent should be used in all cases of fractured hip. Surgical patients are no longer grouped as clinical entities, but each is an individual, requiring safeguard and preparation with the viewpoint not alone of the pathology, but the patient as a whole.

The efficiency of the agent is of next importance, since the surgeon cannot do his best work if handicapped by inadequate relaxation. Every anesthetist is faced with the problem of how to secure the necessary muscular relaxation with the minimum harmful side effects. Due to advances in anesthesia there are certain anesthetic agents that are used with relative safety, when it is desirable to maintain deep anesthesia for a considerable time.

Preparation and preoperative medication:

A large percentage of orthopedic work is traumatic in character. Traumatic surgical procedures are frequently surgical emergencies, and the patients are rushed immediately to the operating room, with little or no preparation. These cases are more exacting upon the surgeon and the anesthetist than routine surgical procedures. Now it is being appreciated that no agent or method for anesthesia is safe and effective for the patient not properly prepared.

The presence of shock demands immediate attention. The judicious delay of the operation while treatment of shock is instituted undoubtedly decreases the anesthetic and operative mortality. If the operation cannot be delayed, treatment of shock may be instituted in the operating room. Many of the patients with severe crushing injuries, or compound fractures with considerable blood loss will require plasma, or blood transfusion. Others with less severe shock will respond to intravenous fluids, artificial heat to the body, and stimulants as indicated. The fractures should be immobilized with temporary splints until the patient is considered in a safe condition for the anesthetic.

The anesthetist should be alert in detecting an early increase in the pulse rate and a drop in blood pressure. Proper steps taken at this stage will prevent impending shock and in many instances will be lifesaving. The better tone of the cardiovascular system in light anesthesia makes it a definite advantage to the patient to maintain this as much as possible. The maintenance of plenty of oxygen must never be sacrificed in the attempt to secure deep anesthesia. It has been proved that the toxic effects of an anesthetic on the heart, liver, and kidneys are greatly increased in the presence of anoxia.

The presence of food in the stomach offers a definite hazard to the patient undergoing inhalation anesthesia. When possible, it is advisable to postpone the operation until the stomach can be emptied normally.

The position of the patient is often not given much attention. Patients

*Dr. Talley is serving overseas in the U. S. Army Medical Corps.

in the prone position should have sand bags so placed under the shoulders as not to interfere with normal respiratory movements.

The proper premedication facilitates the administration of any anesthetic. The principal aims of proper preoperative medication are to allay fear and emotional disturbances associated with the operation, and to lower metabolism to the basal rate, in order that the operative conditions may be obtained with a minimum amount of the anesthetic agent. With proper preliminary medication the incidence of cardiac irregularities during anesthesia are decreased.

I prefer morphine and scopolamine administered three-fourths to one hour before the operation. In nervous or muscular, robust individuals a short-acting barbiturate may be administered one hour before the morphine and scopolamine. Judicious care should be taken not to oversedate. This is particularly true when cyclopropane is to be used. Cyclopropane is depressing to the respiration, and large doses of drugs commonly used preceding ether, nitrous oxide or ethylene are not generally favored. If there is a question in your own mind whether the patient should have 1/4 grain of morphine, or 1/6 grain, give the smaller dose. When cyclopropane is to be used, I prefer the administration of atropine to scopolamine because the former depresses production of secretions in the respiratory tract without influencing sedation.

Difficulties Entailed in Orthopedic Surgery

There are many conditions which present difficulties both in the choice of the anesthetic and the method of administration. Frequently employed in orthopedic surgery are the x-ray and other electrical apparatus. This makes the use of ethylene and cyclopropane hazardous, while many other circumstances render the employment of spinal anesthesia impractical.

The unavoidable exposure of the patient at the end of the operation for the application of plaster cast is an additional handicap to a smooth convalescence of the patient. Many of these patients can be shifted to a lighter plane as soon as the major part of the operation is over. As contrasted to abdominal work, deepening of the anesthesia is essential for closure of the peritoneum.

Spinal anesthesia

It is a fact that many orthopedic surgeons prefer inhalation to spinal anesthesia. The reasons are obvious, for most operative procedures of this type require hammering, chiseling and sawing of bone. This is trying on the patient's nervous system, resulting in poor cooperation during the operation. In case of multiple fractures it is difficult to place the patient in proper position for the spinal puncture. With proper selection of cases, especially operations on the lower extremities and in those cases where inhalation anesthesia is contraindicated, spinal is the anesthesia of choice. We have found spinal anesthesia an advantage in many hip fractures in the aged, knee joint operations, and corrective operations for deformities of the feet.

The dosage required for spinal anesthesia for orthopedic procedures is much smaller and rarely need exceed 100 milligrams of procaine hydrochloride. We have found that 50 milligrams is sufficient for foot operations, 75 milligrams for knee or leg operations, and 100 milligrams for hip operations. It produces good relaxation with little or no after-effects, and may be safely used in properly selected cases.

Inhalation anesthesia

Chloroform is practically never used because of its toxicity and its narrow margin of safety.

Ethylene and cyclopropane are both inflammable and explosive. These agents cannot be used where there is x-ray or electrical apparatus or where hammering is necessary during the operation. Ethylene and cyclopropane can be used to advantage in many conditions in which this equipment is not needed.

Cyclopropane is an effective and potent anesthetic with practically no toxic effect upon the blood chemistry or vital organs. It is especially indicated in conditions where ether is to be avoided, and in cases where the patient needs a high percentage of oxygen, as in anemia, sepsis, diabetes and general debility. Its smooth and quick induction, accompanied with good relaxation, renders this anesthetic agent of great value in many orthopedic procedures. It may be employed to advantage in cases of manipulation and stretching, reduction of dislocations and fractures, and incision and drainage of suppurative joints.

Ethylene will give moderate relaxation which can be safely continued over a period of time. It does little damage to the vital organs, is not depressant to the cardiovascular system, and for this reason is often a desirable agent to use. When deep anesthesia is needed, it is necessary to add a small amount of ether. The effects are due to synergism rather than primarily the ether effects. This combination gives good deep anesthesia, with relatively few after-effects, and except for the explosibility would be more often used than it is now.

This leaves the most common anesthetic agent used, nitrous oxide. Since it is only about 25 per cent as potent as ethylene or cyclopropane, it is more often employed for short and minor operations. Nitrous oxide alone will not relax the patient, and must be used with ether for deep anesthesia. The effects of this are essentially those of ether used by the closed method. The maintenance of plenty of oxygen must never be sacrificed in the attempt to secure deep anesthesia.

Ether is still the stand-by in the majority of operations, and is the anesthetic which is the easiest and safest to administer. It gives the maximum relaxation of all general anesthetics. It is the anesthetic of choice for children. With its 100 per cent potency ether is a valuable supplement to all weaker anesthetic agents. Its toxicity is much reduced when in combination with other drugs. It should be avoided for patients with respiratory disturbances or with marked kidney and liver damage.

Rectal anesthesia

Basal anesthesia reduces the amount of supplementary anesthesia by one-half in long and difficult operative procedures. Avertin is the agent most popular with orthopedic surgeons.

Patients as a rule prefer the onset of anesthesia while lying in bed. It is especially suited to conditions in which the patient has to lie in an awkward position during the operation. In spine fusion operations the position of the patient is such that the anesthetist has difficulty of access to the mouth or nose. The continued period of analgesia following the operation allows these patients in most instances to recover from any initial pain or shock as a result of the operative procedure, before they regain full consciousness.

Avertin is eliminated through the liver and kidneys and should not be employed in cases of marked liver or kidney damage. Other contraindica-

tions for its use are infections of long standing, diabetes, anemia, and marked arteriosclerosis. It should not be used in aged people and in infants. The dose ranges between 60 and 80 milligrams per kilogram of body weight.

Anesthesia in ambulatory patients

The orthopedist is frequently confronted with the problem as to what he should use for minor operative work on ambulatory patients who expect to go home. Some of the surgical conditions that fall into this group are: simple fractures and dislocations, repair of lacerations, and drainage of abscesses.

The anesthetic adapted for this type of case is one which is rapid in induction and recovery, with little or no after-effects. The anesthetic best fulfilling these requirements is nitrous oxide. Nitrous oxide may be used safely in short operative procedures in the office, and the patient may go home in a short time. The equipment is not always available and gas anesthesia cannot be used.

Ethyl chloride and chloroform are both rapid in induction, but are not recommended because of their toxicity.

Ether is safe, but not desirable because of the long induction and slow recovery, which is usually accompanied with undesirable symptoms.

Vinethene given by the drop method can be employed for short operations in the office. It has a degenerative effect upon the liver if administered for a long time. It is best suited for cases where quick induction and good relaxation are desired.

Regional anesthesia can be used successfully in many fractures of the upper extremities and fractures around the ankle joint. It is also employed to advantage in repair of tendons, amputation of toes or fingers, and insertion of Kirschner wire for skeletal traction.

Intravenous anesthesia

Intravenous agents have been found useful and desirable in short operative procedures. Many surgeons have obtained good results in major operations where anesthesia is desired for a considerable time.

Pentothal sodium, most commonly used, is one of the lighter barbiturates, is catabolized with marked rapidity, and apparently leaves no ill effects. It is employed in fractional doses, based on the individual's reaction. Its success depends greatly on its perfected technique of administration. It is especially adapted for traumatic injuries about the head and face. It is of definite advantage because of prompt return to consciousness without nausea and vomiting. Its simplicity makes it useful for fractures, and its freedom from fire hazards makes it desirable in cases requiring x-ray or other electrical equipment.

In conclusion, it may be stated that no anesthetic agent is safe and effective for the patient not properly prepared. The delay of operation for treatment of shock in surgical emergencies will decrease the anesthetic and operative mortality.

Proper preliminary medication facilitates the administration of an anesthetic by allaying fear and emotional disturbances.

The employment of the x-ray and other electrical equipment in many orthopedic procedures makes the use of certain agents hazardous.

The anesthetic agent best adapted for the ambulatory patient is one which is rapid in induction and recovery with little or no after-effects. Nitrous oxide is the agent best fulfilling these requirements.

NITROUS OXIDE ANESTHESIA IN THORACOPLASTY

MARGARET T. GOODE

Herman Kiefer Hospital, Detroit, Michigan

Read at the meeting of the Michigan Association of Nurse Anesthetists held in Detroit February 19, 1944.

There is still disagreement among authoritative anesthetists in regard to a suitable anesthetic for thoracoplasty in pulmonary tuberculosis but among the agents still being used is nitrous oxide-oxygen. My remarks will be confined to this anesthetic agent and the factors associated with its successful administration as used at the Herman Kiefer Hospital.

No anesthetic agent that has been developed as yet is entirely satisfactory but the one chosen should meet most of the following requirements:

1. There should be a wide margin of safety between the anesthetic state and asphyxia.
2. It should be non-irritating to the lungs in amounts sufficient to produce light surgical anesthesia.
3. Ability to maintain quiet, not jerky, respiration and to retain the cough reflex. This is important in the prevention of aspiration and retention of secretions with possible spread of the tuberculosis and tuberculous pneumonia.
4. Rapid recovery from the anesthesia, so that the patient may cough voluntarily and expectorate all secretions at the completion of the operation.
5. Little tendency to cause vomiting during and after operation.
6. It should be non-inflammable if the Bovie unit is used for hemostasis during the operation.

Most of these requisites have been listed by Alexander in his book "The Collapse Therapy of Pulmonary Tuberculosis," and in our experience, nitrous oxide and oxygen has met most of the important requirements satisfactorily.

The preoperative preparation of patients with pulmonary disease is most important. These patients are likely to have a large amount of bronchial secretions which must be removed before the administration of the anesthetic, if the operation is to proceed smoothly and the danger of the patient aspirating the secretions avoided. This can be accomplished usually by postural drainage and by encouraging the patient to cough and expectorate. The anesthetist must be sure that the patient is free of secretions before starting the anesthetic and this can be determined easily by having him cough a few times. Most patients coming to the operating room for the first time are apprehensive. This fear can be diminished by the anesthetist visiting the patient in his room before operation.

The majority of anesthetists believe that inhalation anesthetic agents require preoperative medication for smooth administration. Premedication should be individualized whenever possible but the dosage should never be large enough to dull the cough reflex during or after operation. In general, to assure a good night's rest before operation a mild barbiturate is given. In the morning the barbiturate is not repeated but morphine is given on call, the amount varying with the age, weight and general condition of the patient. Atropine is not

used because it makes the secretions more viscous and difficult to raise.

As most of our patients have a decreased respiratory functional reserve we try to avoid positions that might cause further reduction in this reserve. It has been demonstrated that in the Trendelenberg position there is a decrease in the functional air reserve, probably from changes in the intrapleural pressures, and this tends to make respirations more difficult and impedes the return of venous blood to the heart. There is also a cephaloid shift of the diaphragm which may decrease the reserve air. For these reasons our patients are placed in a horizontal position. They are placed on the good side with a forty-pound sand bag in front of the chest. The upper arm is extended over the side of the operating table. The upper leg is straight and the other is flexed at the knee. To maintain this position, restraint straps are firmly placed across the hips and below the knees.

When the surgical team is ready, the anesthetic is started and the operation is begun six or seven minutes later. The gas anesthesia should be so induced and maintained that the patient remains quiet and breathes smoothly. This conserves the patient's energy and prevents the aspiration of bronchial secretions to undiseased portions of the lung. Ether vapor should be used only when the patient cannot be kept asleep without moderate cyanosis. Very often in resistive patients the difficulty may be overcome by the giving of larger amounts of oxygen. Our surgeons have never found it necessay to supplement nitrous oxide-oxygen anesthesia with local anesthesia.

In Schede or revision thoracoplasty, intravenous solutions are given from the beginning of the operation. Shock is less frequent and patients leave the operating room in much better condition than formerly, when intravenous solutions were used only when judged necessary.

Our results with nitrous oxide-oxygen as an anesthetic agent have been so satisfactory that we have not tried other agents. Also, as all our surgeons use the Bovie unit for hemostasis because it reduces the operating time and the length of the anesthesia, this automatically eliminates cyclopropane, ethylene and other gaseous anesthetics except nitrous oxide-oxygen. During 1942, 408 stages of thoracoplasty were done using this anesthetic, and in 1943, 360. There were no deaths attributable to the anesthesia.

When the operation is completed, the patient is encouraged to cough and expectorate until dry. If the secretions are copious, an aspirator is used to remove them from the mouth and pharynx. If the cough is persistently wet, a bronchoscopy should be done before the patient leaves the operating room.

A warm bed is brought into the operating room and the patient placed in it on the operated side. Postoperatively all patients are given intravenous solutions but blood transfusions are given only when judged necessary.

As it is not easy to administer nitrous oxide anesthesia in correct proportions to maintain the patient's cough reflex, keep him quiet, and at the same time not produce cyanosis, these results may be expected only with trained personnel.

TAMING CURARE FOR ANESTHESIA

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Strong poison with peculiar physiologic properties has been one of the favored imaginative topics in literature and dates back to the very origin of man's ability to communicate with his fellow man. The destruction of a powerful beast or a dangerous enemy by some subtle means which involves cunning rather than strength has always appealed to mankind. Many savage tribes have employed poisons for this purpose, and it is in this way that we trace the origin of curare to that nebulous miasma we speak of as the "prehistoric" era. We actually find it described for the first time in Hakluyt's "Voyages," in which he relates how Sir Walter Raleigh met with the Indians of the Orinoco plains and, in 1595, returned to England with a number of curiosities, including curare as well as tobacco.

Today the Indians of the upper reaches of the Orinoco and the Amazon prepare and use curare in much the same manner as they did when Sir Walter met them. They make a brew, a decoction of the plant's stems, and after it has been strained and boiled to a tarry consistency, the arrow poison is ready. The arrows are dipped in it and allowed to dry.

Clinical Applications

Early attempts to utilize the drug in therapy were hampered by the fact that the supply was sporadic and undependable, and the potency varied tremendously from sample to sample. With the more recent advent of a standardized curare, intocostrin, therapeutic investigation has made rapid progress.

Shock Therapy

One of the principal indications for the use of curare is as an adjunct in convulsive shock therapy of psychiatric disorders. The intensity of the muscular contractions which occur during metrazol or electro-shock therapy are one of its most serious drawbacks; indeed, a significant proportion of patients suffer fractures of the long bones and compression fractures of the vertebrae. These hazards can be completely eliminated by the administration of intocostrin. Soon after such administration, the voluntary muscles begin to relax.

The first symptoms of relaxation induced by intocostrin are haziness or fuzziness of vision, followed by a bilateral drooping of the lids, with heaviness of the face and relaxation of the jaws. Then generalized heaviness and weakness of the neck muscles, with inability to raise the head, are followed by weakness or complete paresis of the spinal muscles, legs and arms. Shallowness of respiration is the last symptom to appear. These reactions take place fast enough, so that the complete picture is obtained in three to four minutes after commencing the injection. The effect, as described, recedes slowly and is ended in fifteen to twenty minutes.

The use of intocostrin for the purpose of protecting the patient undergoing convulsive shock therapy has found very wide application in psychiatric practice. The dose is regulated so that shallowness of respiration is not too significant; and where it does become too pronounced, artificial respiration with or without prostigmine is sufficient to overcome any momentary difficulty.

Anesthesia and Curare

Relaxation is so evenly and so readily obtained in shock therapy with in-

tocostrin injections that experience so gained naturally fathered the thought of its possible application for surgical purposes. Surgical manipulations within the abdomen are always facilitated by a state of complete muscular relaxation associated with quiet breathing and contracted intestines. That such a completely relaxed state could be achieved without hazard to the psychiatric patient implied that stimulants to any of his patients. In each case temporary but complete muscular relaxation was produced. Some of the patients were healthy young adults particularly resistant to anesthesia. In one instance, as the surgeon began to close the peritoneum, the abdominal muscles became tense, but on administration of the contents of a 5 cc. ampule of intocostrin the abdomen became quite

FIGURE I

The curare vine is parasitic, clinging to large trees and usually rising to several hundred feet above the ground before it flowers. One of its chief habitats is the Upper Amazon Basin.

the same end might be achieved during anesthesia. Dr. Griffith of Montreal was the first anesthetist to make such use of intocostrin. He reported a group of twenty patients anesthetized with cyclopropane to whom intocostrin was administered to produce relaxation. His early dosages were 0.5 to 1 milligram per pound of body weight. He gave the injection rather rapidly, in less than a minute, to the patient while under gas anesthesia, and he did not find it necessary to administer artificial respiration or soft and no difficulty was experienced in finishing the operation.

Dr. Cullen of the University of Iowa had already tried curare in dogs but had observed such profuse salivation and such respiratory depression that he did not make use of the drug in man until after reading Griffith's paper. His patients were given premedication with morphine and scopolamine in the usual manner and were anesthetized by the carbon dioxide absorption technique to the first or second plane level of third stage anes-

thesia and there maintained. The intocostrin was introduced intravenously at about the time the skin incision was made. At the same time the flow of the anesthetic agent was discontinued in order to assess the degree of respiratory depression. If the optimal effect of complete muscular relaxation and quiet intestines was not achieved, the intravenous injections were repeated to obtain the desired effect. Relaxation usually then persisted for one or two hours. Although repetition of injection was not usually necessary, even for long operations, it was often advisable to inject more intocostrin at the time of closure of the abdomen provided that the operation had been required for upwards of three-quarters of an hour. The usual first dose for patients between twenty and seventy years of age was 60 milligrams, and if this proved insufficient, 40 milligrams were added. If additional relaxation was still necessary, 20 milligrams were administered at three to four minute intervals until the optimal state was reached. With these large doses Cullen found that along with the ideal abdominal state of complete muscular relaxation and quiet intestines there was also appreciable depression of respiration, a depression which persisted for some five to twenty minutes. However, artificial respiration by intermittent inflation of the lungs, using manual compression of the rebreathing bag, was all that was necessary, and regularly normal ventilation reappeared long before the abdominal muscle tonus returned. Cullen, even with his large doses, found undesirable circulatory effects infre-

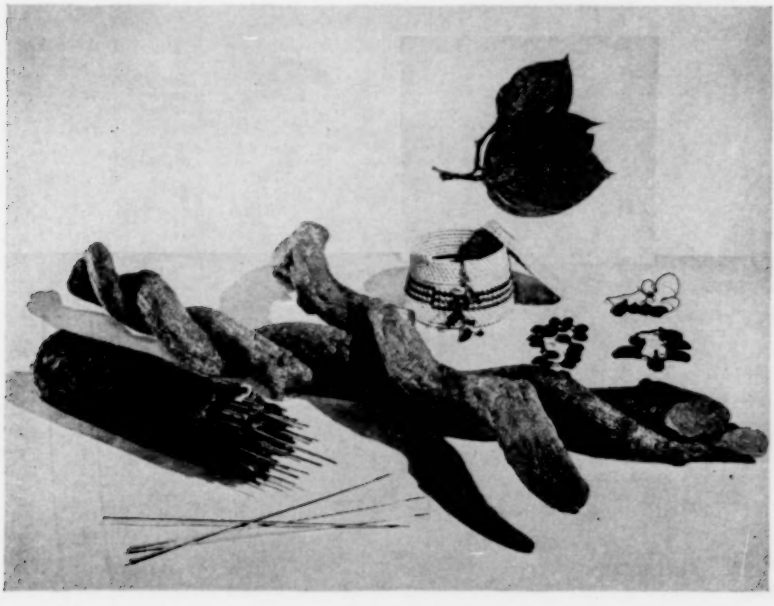

FIGURE II
Curare-tipped arrows, quiver of arrows, curare stems and leaves of curare plant, with native basket and ornaments.

quent and limited to instances where large amounts of intocostrin were given at short intervals. There was always prompt recovery.

The enthusiasm of the surgeons for this type of anesthesia can be shared by the nursing staff, for the use of intocostrin-cyclopropane anesthesia causes the patient to awake more promptly and to require the minimum

gations of intocostrin in anesthesia. He continued his policy of carrying patients in light second-plane anesthesia, and by using sufficient doses of intocostrin he obtained as good relaxation and contraction of the intestines, with quiet breathing, as could be achieved with spinal anesthesia. His experience showed that most adults in good health can tolerate at

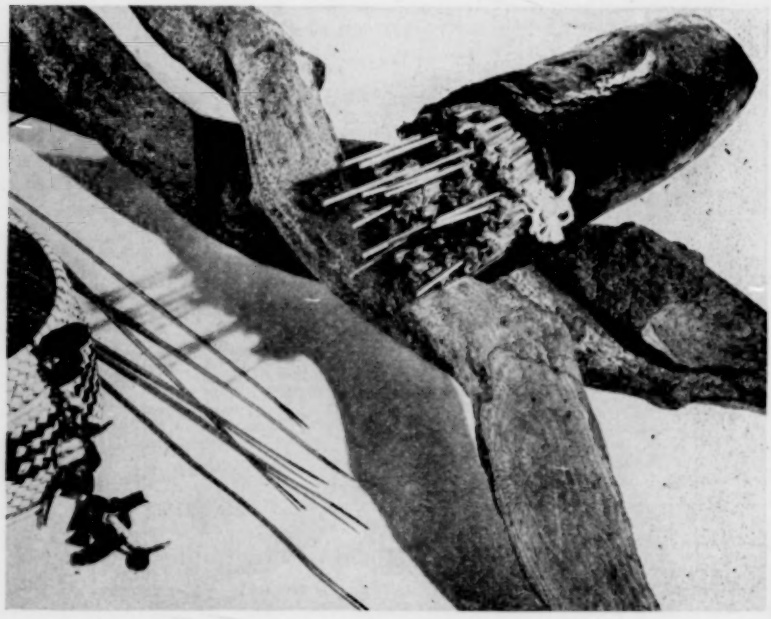

FIGURE III
Curare stems, with curare-tipped arrows taken from the quiver of arrows lying across the stems.

of postanesthetic care. The scope of usefulness of cyclopropane for surgical procedures requiring complete anesthesia was widened and the hazard of cardiac arrhythmia was reduced by avoiding high concentrations of cyclopropane.

In a more recent paper, read at the New York Academy of Medicine, Cullen reported on a larger series of patients and on more extended investi-

least 60 milligrams as an initial dose, and subsequent doses of from 30 to 40 milligrams can be safely added in three to four minutes. Most of his patients were given cyclopropane anesthesia but some patients were carried during the anesthesia with nitrous oxide.

If used with ether, the dose of intocostrin must be reduced to about one-third of that used for cyclopro-

pane. Its advantage during ether anesthesia lies in producing relaxation without deep anesthesia and in the fact that it causes the intestine to contract and produces a quiet abdomen.

In summary, investigative work with intocostrin in anesthesia indicates that the muscular relaxation obtainable and the quieting and the contraction of the gut are such as to make the method comparable to the effects obtained with spinal anesthesia. To some degree these effects can be produced with inhalation anesthetics alone but none of them can be obtained to the same degree. In the case of cyclopropane anesthesia the improvement in muscular relaxation, without danger of cardiac effect from high concentrations of the anesthetic, is an important advantage. It also may have a protective action due to peripheral blocking of response to vagal stimulation and of the sympathetic division of the automatic nervous system.

THE COLD DISINFECTION OF RUBBER AIRWAYS

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The problem of the disinfection of rubber hospital equipment such as airways, breathing bags, surgical gloves, et cetera, has become an acute one for hospitals today. It is necessary to make these articles last as long as possible, since many of them cannot be replaced and since replacements are so often of inferior quality. And for articles which must be disinfected so frequently, making them last longer is indeed difficult. This problem of cold disinfection was presented to the laboratories of the Gerson-Stewart Corporation by a number of hospitals. With the aid of Gertrude Fife, head of the Anesthesia Department of the University Hospitals, a series of tests was carried out on rubber airways. Airways were chosen because they represent a standard type of rubber equipment used frequently in hospitals and also because they present some unusual difficulties in disinfection. The airways were received directly from the patient and were tested within four to six hours after use. They often contained a considerable amount of mucus, thus presenting the problem of disinfection with organic matter present to absorb the disinfectant and possibly reduce its effectiveness.

The selection of a proper combination of disinfectant ingredients was the next important factor, since rubber articles are sensitive to phenols, cresols and the usual types of disinfectant ingredients. Rubber is also subject to deterioration by oils and similar soap ingredients. A combination of sodium chloro phenyl phenate properly emulsified with a sodium salt of a low molecular weight fatty acid glyceride was found to be most suitable. The sodium chloro phenyl phenate gives the product excellent germicidal properties and the fatty acid glyceride does not materially lessen the life of the airways. This formulation has been used for a number of years to disinfect rubber masks, goggles and boots in industrial plants. The product is of low toxicity, is easily rinsed from the surface, is almost odorless and is non-poisonous in the dilutions used.

The procedure was developed after

a number of experiments to find the simplest and most effective technique for the complete disinfection of airways in as short a time as possible. The technique devised is one which could be used easily in a hospital, is very effective and requires no more time than other methods still generally used.

Procedure

The airways were first swabbed with a sterile cotton swab and this swab was then cultured in brain broth media—the purpose being to determine the presence of bacteria in the airway and the general types of organisms if present.

After swabbing, the airway was totally immersed in 250 cc. of disinfectant solution for ten minutes. For one minute of this time the airway was brushed out thoroughly with a soft brush to remove any mucus or material which might adhere to the inside of the airway and to insure contact of the disinfectant with all parts of the airway. At the end of ten minutes the solution of disinfectant was poured off and the airway was rinsed with 250 cc. of sterile distilled water. This step was taken so that there would be no carry-over of the disinfectant when the airway was swabbed again, thus eliminating any possibility of getting positive results due to inhibition rather than disinfection. The airway was then swabbed again as before to determine the effectiveness of the disinfectant solution.

Experimental Results

% Soln. Aro Brom	*Before Disinfection*	*After Disinfection*	*Notes*
5%	+	0	+ Indicates presence of bacteria
5%	+	0	0 Indicates absence of bacteria
5%	+	0	
5%	+	0	
5%	+	0	
5%	+	0	
5%	+	0	
5%	+	0	
5%	+	0	
2%	+	+	
2%	+	0	
2%	+	+	No agitation
5%	+	+	Flushed out with water — no brushing
5%	+	0	One hour—no agitation
5%	+	0	20 minutes—no agitation

From the above results, it is obvious that the method used is effective when a 5 per cent solution of the disinfectant is used with agitation. We found that simply brushing the airways out once or twice with a soft brush was all that was necessary to insure complete disinfection of the airway. Possibly flushing the airway out with a stream of running water before immersing in the disinfectant solution would be an alternative to brushing them out. We have not made enough tests as yet to determine this point. We have also found that the solution of disinfectant can be re-

used several times without loss of effectiveness.

The organisms present in the airways were predominantly staphylococcus aureus and staphylococcus albus, and often hemolytic and nonhemolytic streptococci.

In conclusion, it is necessary only to point out that in the cold disinfection of rubber airways it is essential that a 5 per cent solution of this Coef. 5 disinfectant be used with agitation to insure complete sterilization of the airway; that the method used is both simple and time-saving; that airways when sterilized by this method will last considerably longer than when boiled, as is generally done; that the disinfectant has been found to be effective against those types of organisms encountered in the disinfection of hospital equipment; and that this procedure offers a practical demonstration of the effectiveness of this disinfectant.

ETHYL CHLORIDE

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The discussion of no other anesthetic agent, with the possible exception of chloroform, has aroused so much controversy as ethyl chloride. The resulting disputation simply resolves itself into two groups—those who do and those who do not approve of ethyl chloride as an anesthetic agent, each being thoroughly convinced and having many points to bear out their convictions.

It is not my purpose to review the history of ethyl chloride or to dwell at length upon its chemical properties. With the discovery and early use of this agent you are undoubtedly familiar. The historical facts concerning the experiments with and developments of any anesthetic agent are interesting in limited doses but it is not so much these contributory facts or even the knowledge of the chemical formula which are primary factors in the actual results the experienced anesthetist may obtain. As for the pharmacologic characteristics—ethyl chloride is a colorless liquid having a sweet taste and a characteristic odor. It is inflammable, evaporating very rapidly at room temperature, and has a boiling point of 58 to 59 degrees Fahrenheit. It diffuses rapidly and reaches a concentration in the blood sufficient to produce anesthesia in a very short time.

In textbooks, abstracts and periodicals devoted to anesthesia there is little said in regard to ethyl chloride, and what is found is often brief and for the most part confined to rather terse derogatory statements regarding its limited use, its narrow margin of safety and its effect on the cardiac muscle. These statements must be granted, in part at least, but they can likewise be modified by a consideration of the merits of this agent.

In recent publications we find that it is mainly the dental anesthetists who have a good word to say for this most maligned of all anesthetic agents. I refer to the articles of Charles W. Lincoln, D.D.S., of Pasadena, California, and S. A. Forman, D.D.S., of Cleveland, Ohio, in *Current Researches in Anesthesia and Analgesia.* Both of these dentists have found in ethyl chloride a most satisfactory agent to produce analgesia which serves admirably to accomplish simple dental procedures. It seems likely that this anesthetic may be gaining popularity

in the field of dentistry, in the hands of competent anesthetists proving a satisfactory method. It is not as an analgesic agent that I wish to present ethyl chloride to you, but rather in a more extensive field, maintaining that it has a considerable and rightful place in the armamentarium of the nurse anesthetist, especially in a small general hospital.

Specifically, ethyl chloride serves most usefully as an induction for ether, and for this purpose it seems to me it has inestimable value. Your immediate reaction may be—what about nitrous oxide, surely this can be used, and open ether is no longer used as often. The following is a summary of the anesthetics administered during the last ten years at St. Mary's Hospital:

Anesthetic	*Use in percentage of cases in ten yrs.*	*In 1942*
Intravenous	1.3%	8%
Local	15%	10%
Spinal	4%	3%
Ethylene	2%	5%
Cyclopropane	6%	5%
Nitrous oxide	24%	25%
Ethyl chloride alone or as an induction to ether	48%	31%

You will note the large percentage of cases in which this agent was used, and even in 1942, although reduced, the percentage is still larger than that of any other anesthetic agent. Of course the tonsillectomy will account for many of these cases and likewise surgery upon the very young, in short procedures for which ethyl chloride is especially suitable.

I am not attempting to present ethyl chloride as a perfectly safe anesthetic; obviously that would be untrue. Incidentally, can any anesthetic agent be regarded as entirely foolproof? When any anesthetic is being administered one must always have satisfactory resuscitative means at hand and be ready to work rapidly and effectively. Some of you heard Dr. Louis W. Schultz speak at the Tri-State meeting in Chicago in 1941 on "Anesthesia for Infants in Oral and Plastic Surgery," in which he advocated the use of ethyl chloride for induction for babies three weeks old. Ethyl chloride is his choice of anesthetic as an induction to ether for infants, but he explained that the only means of resuscitation rapid enough to be effective is mouth to mouth breathing, which he stands ready to give if the need arises. Dr. Schultz has found ethyl chloride an ideal anesthetic agent for very young babies, eliminating the prolonged strangulation period often resulting from an ether induction, with the baby crying and a considerable accumulation of mucus to hamper the work of the surgeon. It has not been our policy, however, to use an ethyl chloride induction for children under nine months old; many procedures on infants can be done under local anesthesia, which is preferred by many surgeons. Dogliotti states, "In the practice of anesthesia in infants and children the anesthetic agent should be selected in the following order: Preference should be given to ethyl chloride, then nitrous oxide or ethylene whenever the operation does not require muscular relaxation. Ether should be used by the open mask method when complete muscular relaxation is desired." He condemns the old methods of partial suffocation in the initial stages by the administration of massive doses with the idea of rapidly overcoming the instinctive resistance of the baby, and believes that regardless of the anesthetic employed in the very young patient, it is im-

perative to use small doses and administer them slowly, since infants are sensitive to rapid induction. Also it is necessary that the anesthetic be given with a high oxygen content.

Ethyl chloride serves indispensably in certain short procedures, such as opening an abscess, reduction of a dislocation, biopsy, painful dressings, removal of drains, paracentesis, or the taking of a few skin sutures. These procedures, which can be accomplished in a minute or two, can thus be done with no discomfort to the patient and a minimum of equipment is required. Ethyl chloride being rapidly eliminated, the patient may leave the hospital safely within a short time without injurious aftereffects or the disorientation often experienced with the intravenous barbiturates.

Before taking up the actual administration and technique of ethyl chloride I would like to mention its value in those difficult cases confronting every anesthetist—the tonsillectomy on an adult under general anesthesia. The adult who either at his own or his doctor's insistence submits himself to a general tonsillectomy is usually nervous and upset. This condition may be somewhat allayed by preoperative medication with morphine and atropine, and further by some reassuring words. At best, however, these cases present a special problem to the anesthetist who expects to maintain anesthesia in a satisfactory plane with oral insufflation of ether, while the surgeon resects the probably adherent and atrophic tonsils and takes all precautions against subsequent bleeding. The anesthetist is valiantly endeavoring to keep the patient from coughing, meanwhile probably assisting in the manipulation of the suction apparatus while the clamping and inspection for possible bleeding continues, often for long periods, before the case is finished. The induction often presents an equally difficult problem. If a machine is available, although often not the case when the schedule is crowded, some anesthetists prefer to use a nitrous oxide induction. This method I leave to those who prefer it and suggest that the meritorious action of ethyl chloride as an induction agent be considered. Rapidly accomplished, the ethyl chloride induction progresses without any irritation to the patient and, given with plenty of air, there is no suggestion of cyanosis and rarely any vomiting. It is pleasant to take and practically no stimulation of the salivary glands or irritation to the mucus membrane occurs. The patient after a few breaths usually experiences a sensation of exhilaration for a moment and then is immediately unconscious. Checking with patients afterwards reveals that they suffer no discomforts and no smothering sensation and although there may be a moderate period of excitement with the change to ether, it is an ideal anesthesia from the patient's standpoint and from the anesthetist's standpoint gives the most satisfactory, rapid and uncomplicated induction.

The instances in which we find that ethyl chloride alone or as an induction to ether is the anesthetic of choice are as follows: (1) certain types of dental analgesia (2) short procedures for which ethyl chloride can be used alone for a quick-acting, rapidly eliminated anesthetic (3) for infants and children as an induction for ether in general surgery (4) for induction for oral insufflation of ether in nose and throat work, or as induction for drop ether in indicated cases.

The technique we have used in the administration of ethyl chloride is very simple. An eye covering of vaseline gauze is used, and without tow-

els an ordinary ether mask of the Yankauer type, covered with twelve layers of thin gauze, is placed over the patient's face. The ethyl chloride is then sprayed on the mask with a circular motion of the hand while the patient counts aloud slowly, instructing him, meanwhile, to blow gently if the vapor seems strong. The counting will cease usually at about fifteen to twenty and in two to three minutes the respirations become deep, stertorous and regular, with evidence of a slight muscular spasm followed by generalized muscular relaxation. The gentle snore is an immediate indication to stop the administration of the ethyl chloride and if the operation is to be short, the patient is now ready for the incision or other procedure. If necessary a small amount of ethyl chloride may be given but it is not advocated to continue the fractional administration of ethyl chloride for more than five minutes at the most. Under this anesthesia there may be absence of lid reflex and some dilatation or constriction of the pupils, but the corneal reflex persists. The pulse maintains its normal force, with a somewhat more rapid rate than normal. If the operation is longer, the change to ether is made when the breathing becomes stertorous, the towels are applied and the anesthesia continued in the usual manner as required, or changed to oral insufflation as the case indicates.

There are two outstanding complications which although they are unusual, must be considered whenever ethyl chloride is used. Rare, but sometimes reported, are instances of cardiac syncope during the inital period, produced by a nervous reflex, and therefore the pulse should be watched closely, discontinuing the administration of ethyl chloride with any sign of disturbance. Obviously, the presence of any cardiac abnormality would be a contraindication for the use of ethyl chloride. Occasionally pharyngeal spasm or spasm of the respiratory muscles will be encountered sufficient to stop respiration. The anesthetic must be immediately withdrawn and the mask removed to prevent an accumulation of the agent. Usually this is sufficient, and the breathing is resumed at once. As previously mentioned, however, resuscitative measures must be at hand. Gentle pressure on the chest, and oxygen by mask or catheter are effective. By obtaining the patient's cooperation with a few words of reassurance before the anesthesia is started, and careful administration with plenty of air, the necessity for these measures will generally be obviated.

Ethyl chloride has been in use at St. Mary's Hospital in Detroit since 1926 and with more than 20,000 administrations there have been no deaths and only an occasional case in which any resuscitative measures were required.

In conclusion, I believe that ethyl chloride has served most usefully, and carefully administered by a competent anesthetist should continue to maintain a unique and important place in the armamentarium of a modern department of anesthesia.

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ANESTHESIA FOR GALLBLADDER OPERATIONS

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Although it is a well known fact that a good anesthesia contributes much to the success of any operation, it is especially important in the case of gallbladder surgery. The anesthetist must consider many factors before beginning, and the success or failure of the anesthesia will generally depend upon how well she has evaluated these factors and has applied them to the individual case before her.

Gallbladder surgery may be generally divided into two categories. These are: first, the case of the ruptured or acute gallbladder, and secondly, the prepared patient. With the prepared patient, the cholecystectomy is performed between the gallbladder attacks, with the patient in the best possible physical condition. The patient may often be obese, and is generally not acutely ill at the time of the operation. If there is complete obstruction of the common duct, however, the patient may be very ill and jaundiced and is considered a poor anesthetic risk.

In the case of the ruptured gallbladder, the picture presented is quite different. The patient's condition depends upon when the diagnosis was made, and upon how soon thereafter the patient is taken to surgery. If the rupture is longstanding, the patient may be moribund and not in a condition to withstand long anesthesia or surgery. In that event it is advisable to use a local anesthetic, but the anesthetist must be prepared to give a light inhalation anesthetic if necessary. In the event that the diagnosis is made within a reasonable length of time, the following picture is presented: a toxic patient with a high temperature, rapid pulse, shallow respirations, and a board-like abdomen which may or may not be distended. Intravenous solutions should be given before the anesthetic is started.

The premedication to be used is an important problem, and should be given serious consideration. Avertin is definitely contraindicated as it is detoxicated in the liver and also depresses the respirations. Morphine and atropine or barbitals in small doses may be given safely. Any premedication that does not depress the respirations is acceptable. In the event that the gallbladder is ruptured, very little premedication is advised, as the patient's condition will not warrant it.

The anesthetic to be used in gallbladder surgery must be one that is potent enough to obtain the depth of narcosis necessary for complete relaxation. An inhalation anesthetic is generally used. Spinal anesthesia is not widely accepted due to the height of anesthesia necessary and the proximity of the gallbladder and liver to the diaphragm. Some anesthetists prefer to change to drop ether to obtain the necessary relaxation, but in my opinion, this is admitting defeat with the gas machine.

Gallbladder surgery requires profound anesthesia, as the surgeon is working around the great nerve paths. All the signs of established and controlled anesthesia should be present before the incision is made. The lower jaw should be relaxed at this time. If the surgeon should begin before the patient is in the desired plane of anesthesia, poor exposure and tight muscles will confront him throughout the operation. The

gallbladder break should not be raised until the patient has reached the level of anesthesia desired by the anesthetist, as the raising of this break may depress the minute volume of breathing as much as 20 per cent. When the break is raised, care must be taken not to over-extend the head.

In the induction stage, these patients are more prone to vomit, therefore anesthesia should be established as quickly as possible and this reflex covered. Once vomiting has occurred, some vomitus may stay in the throat and upper respiratory tract and thus complicate the anesthesia.

During the operation, traction on the gallbladder and surgery near the common duct may produce the "gallbladder grunt" or phonation sound on inspiration. Generally, no attempt should be made to cover this reflex with deeper anesthesia. If the patient is well relaxed and the interchange of the gases is sufficient, the sound itself should not annoy the surgeon. As the surgery progresses after the initial incision, the anesthetist should keep the patient in deep anesthesia until after the gallbladder has been removed and all the deep manipulation has been done. However, at this time when it is no longer necessary for the anesthesia to be deep, the anesthetist must be careful that the patient does not slip into overdosage, and should at once carry the patient in a lighter plane of anesthesia. If the surgery is prolonged and if there is interference with the respiration and circulation, pulmonary stasis may develop and a sudden circulatory collapse occur unless the surgeon stops the trauma and gives the anesthetist a chance to re-establish good respiration and aeration.

The jaundiced patient presents a separate problem for the anesthetist. These patients definitely do not tolerate deep or prolonged anesthesia. Ether should never be given except when the respirations are of excellent volume. The blood pressure should be taken at five minute intervals to ascertain in what manner the patient is reacting to the anesthetic. If the blood pressure drops 10 to 20 milligrams, the ether should be discontinued and the patient carried in as light a plane of anesthesia as possible. As jaundiced patients have a tendency to bleed more profusely than other patients, the pulse must be watched very closely. Shock may develop from loss of blood and it is a wise procedure to have a canula in a vein before the anesthetic is started. The anesthetist must watch the color of the blood in the wound, as the jaundiced color of the skin makes it difficult to distinguish cyanosis by the ordinary methods.

The postoperative care is especially important. If any mucus has collected during the anesthesia, a suction should be used in the upper respiratory tract before the patient leaves the operating room. The danger of pulmonary complications is greater following gallbladder operations than in other abdominal surgery. Hyperventilations of carbon dioxide and oxygen every four to six hours for the first two days will do much to prevent atelectasis. It is the duty of the anesthetist to watch the progress of the patient carefully for the first few days after the operation, and she must realize that her responsibility does not end when she removes the mask from the patient's face.

MY ASSIGNMENT AS A RED CROSS NURSE

GERTRUDE MADLEY, R.N.
Herman Kiefer Hospital, Detroit

Read at the meeting of the Michigan Association of Nurse Anesthetists held February 19, 1944, in Detroit.

It was in the fall of 1940 that I received a call for duty, my assignment to be Chief Nurse of the American Red Cross Harvard Unit, going to England to study epidemics under war-time conditions. It was felt that we could perform a twofold mission, give help to Britain in her hour of need, and at the same time bring back to our country something of value to be applied after national disasters, when epidemics occur due to crowded conditions following floods, et cetera. We were to have a hutted hospital made of prefabricated material, in panels of four feet. We were to take everything with us, even to the nuts and bolts.

First, we had to decide how big our hospital should be, how many huts should be given over to actual care of patients, and how many huts we should need for other purposes. When plans were final, we had twenty-two; ten for patients, one administration, one laboratory, one kitchen and dining room, one laundry, one storeroom, one recreation, and six for living quarters. Our organization was made up of three parts, laboratory, a public health group and 126-bed hospital. The Unit was sponsored by three organizations, Harvard University, the American Red Cross and the British Ministry of Health. The hospital will be handed over to the British Ministry when the war is over. I went to Washington and stayed there six months helping to plan the hospital, order supplies and equipment, and to recruit a staff of sixty-two nurses. Some nurses had public health experience. They were to go into towns and cities where outbreaks might occur, help trace the origin, and control the epidemic.

We made many plans for sending materials across. We thought we could start by sending material for the first four buildings. We had visions of that arriving and being set up, then the equipment for those four buildings following in the next shipment together with material for other buildings, all being set up in order, but our carefully made plans did not work out that way at all. Things we needed most were the last to arrive—among them, soap and cleaning rags.

Our biggest problem was one of shipping. Everything had to go over by British merchant convoy. Since we were not at war our ships could not put in at British ports. Even though we were not at war, we sent over a tremendous amount of supplies. I feel that not many Americans know how much was sent across, but we saw much evidence of it. People would stop us on the street and shake our hands, many times with tears in their eyes, and say, "Thank you, America." We were taken to supply depots and shown the food and clothing that had been sent across, and those showing us around would express the hope that the people of America would know how grateful they were and every time I have an opportunity I say, "Thank you for Britain."

Before going on to what we experienced over there I would like to tell you of our trip across the Atlantic by British merchant convoy. It was a

thrilling experience and in telling it I pay tribute to the merchant navy. We sailed from New York for Halifax, where our convoy was to be assembled. We waited there three or four days while the ships arrived. It was very foggy and gray in Halifax and we were not at all sorry when the day came for us to be on our way. There were eight of us on a freight ship and we had a jovial Scotch captain. Each boat was given a signal to which she replied and then she left the harbor and took up her position outside. When we had assembled outside the harbor, it was a thrilling sight. There we were, fifty-seven freight ships (much as we see going up and down the Detroit River), arranged twelve in a row, in five rows. In the middle of the front row was our escort vessel, an armed cruiser, and in the middle of the back was the battleship. There were four destroyers on the outside of the convoy and all ships in the convoy carried small guns. The ships in the convoy were from all friendly countries who were at war. Every time the escort vessel signalled a message to the convoy, each ship had to answer. The rate of speed at which a convoy travels is placed by the rate of speed the slowest boat in the convoy can maintain, and we travelled at the rate of five knots per hour, taking twenty-one days to cross. Sometimes it seemed that we could have walked faster. We got to know the ships' signals. We knew that two short blasts meant so many degrees one way, and one short blast, so many degrees the other way, and so we zigzagged across the ocean, the ships keeping in perfect formation.

It was thrilling to go on deck after dark and see the dark silhouettes of the ships and hear the quiet chug-chug. It made me think of a group of people tiptoeing along not daring to make a sound. Somehow one got the feeling of determination of those ships to get the goods to where they were needed. We were warned against throwing things overboard but one day one of the passengers thoughtlessly threw overboard an empty cigarette package. Quicker than it takes time to tell we were reprimanded by the escort vessel. If a submarine had surfaced, that little cigarette package would have told the enemy that a convoy was not too far away. It is not very difficult to understand how a submarine can get into the middle of a slow-moving convoy under cover of night and do untold damage before it is taken care of, and that is just what they do. They fire four torpedoes at once, so they don't often miss.

We tried to avoid having too many nurses in any one convoy, but, we were unfortunate in having nurses on two boats sunk in one convoy, and we lost our house-mother and five nurses. Nine were picked up by a tanker and six were landed in Iceland and two we knew had perished at the time. There was the other boat with the nurses aboard, to be heard from. I will never forget the day that I received a cablegram from Iceland telling me that four nurses had been landed there after twelve days in an open boat. They were suffering from severe frostbite and were returned to America. Then a week later I received a telephone message telling me that two more nurses were landed in Ireland. The other four we never heard from. The two that were landed in Ireland were kept in a hospital there for three weeks. They, too, had severe frostbites. They had been in an open boat for nineteen days in the cold Atlantic. They had one-half cup of water twice a day and a meat ball daily as long as they lasted. The men tried to knock down a seagull but

were too weak to wield the oar. They picked barnacles off the boat to eat. Two men died and those two girls experienced everything that goes with a shipwreck and displayed as much courage as anyone I have ever heard of. They joined our unit and put in one year of good faithful service.

When we arrived at Liverpool, we had our first glimpse of a balloon barrage. It was a beautiful sight, great silver balloons up against a clear blue sky. Liverpool was a distressing sight. There was tremendous damage and the people looked so poor and depressed. We learned that all our hospital beds had been burned in the warehouse at the dock-side only a week earlier. The Battle for Britain was over just a week before we arrived.

We left for London that afternoon, travelling by train. The country was more beautiful than I had remembered it. The fields were green, the hedges very pretty, and the flowers out in profusion. It was the middle of June, 1941. It seemed almost unbelievable that war was so near, but when passing through large towns and cities, we saw much evidence of it. Upon arrival in London, even though there was much destruction, we found the atmosphere was different. There was none of that feeling of depression that we felt in Liverpool. There is much destruction in London but London covers a large area, and somehow one does not get the heartache as when visiting a smaller town or city that has its very heart blasted out. St. Paul's Cathedral stands out very well because so many buildings are down around it. St. Thomas' Hospital across the Thames River from the House of Parliament and Westminster, and known to nurses as the Nightingale School, has been badly hit. Ten nurses and doctors were killed, but no patients. While we were being taken around there, the matron and sisters were apologizing for the condition of things, while we were filled with admiration with the way in which they were carrying on. They presented to our unit an engraving of Florence Nightingale at Scutari and in the lower right corner was Florence Nightingale's own signature. This picture is to be brought over to Washington after the war and hung at the National Headquarters of the American Red Cross. Large blocks, where once stood department stores, are vacant except for the basements, which have been cemented and filled with water for fire-fighting. Lifebuoys hang around them. We had to be sure to fill our bathtubs at night before retiring in case we had to put out fires if the water pipes had been damaged during raids.

When we arrived in England our hospital was not ready, but I had to go down there on business. I stayed at a hotel and during the first night I was awakened by a terrific bombardment. I quickly realized that there was a raid on. The doors and windows would rattle and shake after an explosion. The sky would be lit up as if by fireworks, and through it all I could hear the fascinating sound of the tramp of the warden's feet in the street below. Next morning I learned the raid was nineteen miles away. It was the night that forty-eight land mines were dropped on Southampton. We visited Bath the day after a big raid there. Rescue parties were still digging. It was a horrible sight but I think that the thing that impressed me most was the dazed expression on the faces of the people. On going back a few days later, all of that had disappeared. People were going about their work as usual—they had a job to do. The

only thing that was left of the raid was the horrible destruction which could not be cleared up overnight.

We had our own warden's post at the hospital. We had to go through a very rigid course of training. We had to know how to crawl through a smoke-filled house, do lifesaving, extinguish fires and incendiary bombs, learn to detect poison gas by the smell, and then pass a written examination, after which we received a letter of congratulations from the chief constable, together with an identification card, an arm band, whistle and badge. We were then full-fledged air wardens. We had four air raid shelters on our grounds equipped with heat and light, blankets, hot water bottles, blood plasma, first aid kits, food in cans, stoves, et cetera. We learned, too, to stagger our supplies. So often a large town or city during a blitz lost all emergency supplies because they were stored in one warehouse that was destroyed. We had stores packed away in every building. One can readily see, after a blitz, why the food and clothing sent over from this country meant salvation. How fortunate we are that we are privileged to live in a country like America, and how many of us offer up our thanks in prayer. The things we see in the movies and read about in the newspapers, and hear about over the radio, are actually happening over there. Do we ever try in imagination to live that thing through?

We had many visitors from all over the country. They were interested in our hospital from a standpoint of reconstruction after the war. They were much impressed by our centralization method. As well as having a central supply room, we admitted and discharged all of our patients through one building. The visitors did not like our central heating system any too well. They wondered how we could live in such heat, and they marveled that we did not catch our death of cold every time that we went out. Frankly, I wondered how I ever lived to grow up. I was born and raised over there, and had come to appreciate central heating here, over the method of having to "lay a fire," in front of which I toasted my shins and shivered up and down my spine. I remember how, as a child, I suffered from chillblains on my fingers and toes. However, it was very nice to be back, and to be of service to the land of my birth, and I was made very welcome wherever I went; in fact we all were. People were very kind. We just could not accept all the invitations we received.

It was a few days after our first nine surviving nurses arrived in London, that our director and I were asked to take them to Buckingham Palace to meet the Queen. We were met by the Queen's Lady-in-waiting and taken to the reception room. The Queen shook hands all around and complimented the nurses on looking so nice. I told her they were wearing borrowed clothing—"they lost everything when they were torpedoed and the other nurses had stayed at home so that they could go to the Palace properly dressed." "Just the same," the Queen said, "they look very nice." Queen Elizabeth then took us for a walk through the Palace grounds. The swimming pool was being repaired. The Queen was very animated. She put us completely at our ease and she is every bit as charming as she is said to be.

The following day we went to 10 Downing Street to meet the Prime Minister. That, too, was a thrill. Mr. Churchill, after shaking hands all around, stood in front of us and said, "Well, we are very sorry for the ordeal through which you have passed, but you must thank God, as we do,

that you are here. Thank you for coming." "And now," he went on to say, "I must hurry because I have to have lunch with the King, and I mustn't keep the King waiting because he has to tell me what to do." I can't for the life of me see anyone telling Mr. Churchill what to do.

We also went to the American Embassy to meet our own Mr. Winant who has endeared himself to the hearts of the British people. General Alexander, the British general who has been so active in the East, visited us a few times. We had some of his officers, including a Brigadier General and some of other ranks, in as patients. General Eisenhower and General Mark Clark visited us one Sunday evening for music and coffee. Queen Mary came to see us. We were rather disturbed when she arranged to come on a Saturday afternoon because we were very proud of our laundry. It was the envy for miles around, and our laundry staff did not work on Saturday afternoon. However, the Chief Constable came to see us about the visit. We could not tell anyone that the Queen was coming, not even our nurses, but when we asked the laundry staff if they would mind working, they said, "No," almost eagerly. We found out later that our gardener who was an old British soldier, had seen the Chief Constable when he called. The gardener said that that meant one of two things, either a murder or royalty, and as far as he knew, there had been no murder! It took an hour usually to take any visitor around, but the Queen stayed two hours and a half. We had tea, and then the Queen asked to have her picture taken with us. She chatted and laughed, and frankly, I think she enjoyed her visit as much as we enjoyed having her.

Food rationing is carried on over there differently. The basic essentials of the diet, such as butter, meat, bacon, fats, sugar, tea, milk, et cetera, were apportioned per person per week. The housewife registered at a certain store for these commodities. The storekeeper knew, in that way, how much he should have on hand and the housewife was sure of getting her supplies. Fish and poultry were not rationed but they were not easy to get. Children were allowed extra milk, and only children could buy oranges, the number to each child and the age limit being regulated by the quantity of oranges. For some time we were allowed one egg per person per month, and we did not see it because it went into the cooking. One day, when I was knitting, one of the nurses told me that if I would knit her a pair of red mittens, she would go out and get me an egg. I felt quite safe and said, "All right, get me the egg and I will knit you the mittens." She did, much to my surprise. She had not told me that she was in the habit of visiting a farmer and his wife once a week, who gave her bacon and an egg for tea. This day she did not eat the egg, but brought it back to me. I took it to my room where I boiled it, and there never was an egg that tasted like that one. Our Director sent home for powdered milk and for powdered eggs, so that we were able to use the powdered milk for cooking and drink the fresh milk with our meals. We used the egg powder for cooking and ate our one precious egg. We dug up some ground outside our huts and grew some peas and beans that were delicious.

When I got to England I wrote home saying that I wished I could tell them about the number of ships that were in our convoy. I went on to talk about Heinz's 57 varieties. Later in my letter I said that I thought the British people had enough to eat, but that the diet was monotonous, with not

much variety. When I wrote my next letter, I asked if they understood what was meant by the 57 varieties, and back came the reply, "Oh, yes, we got it, and we have been across to Canada to see how many we can send to you." We were not allowed to write home for anything, so the family thought that that was my way of letting them know I wanted food. The packages they sent were most acceptable, butter and jam especially. There is a point system over there in addition to the allowance of basic foods to cover the purchase of canned goods, fish and meat, fruit and vegetables. Most small homes at any time have kitchen gardens where they grow almost enough vegetables to last the year around. Soap is rationed, which is most uncomfortable. Shoes and clothing are also rationed. We were allowed sixty-six coupons for a period of fourteen months. We could use only twenty-two of them over the first four-month period. When you stop to realize that you give up two precious coupons for each pair of stockings, you will realize why the women in England are not wearing many stockings. People are beginning to look shabby, but it is not noticeable unless you look for it, because everybody looks alike. There was the same shortage of supplies that we are experiencing here today. You took shopping bags and your own paper and string to the store. Even on buses and street cars, boxes were placed for discarded tickets; pieces of paper as small as that were salvaged. You could not buy a kettle or a pot for love or money. There was a utility china, something like a heavy lampshade, for which you paid twenty-five cents for a cup and the same for a saucer. The health of the nation is better than it has been for many years. It is thought that that is due to the controlled, well-balanced diet. People eat all they can get, there is nothing to leave, and all that they get is good for them.

The morale of the people was always high, and we must remember that at that time things were not as bright as they are today. This war has brought rich and poor together as nothing else could, and why not—they were fighting for one common cause, and that, their very existence.

Their civil defense is almost one hundred per cent perfect, but only after much bitter experience. London burned for lack of fire-fighters in the early days, now every man between the age of eighteen and sixty, and all single women are required by law to do so many hours per week of fire watching. They work in pairs, one resting while the other watches.

In the homes are two types of shelters, the Anderson outside, and the Morrison inside. The Morrison shelter is like a large billiard table with a steel top. It can be used as a table during the day, and at night a mattress is put under it, and of the two I think I would prefer the latter.

When we first arrived over there, a large part of the London population was going into shelters at night. We visited the London subways many nights and watched the families arrive to go to bed. There was a first-aid post there with a graduate nurse in charge and canteens where hot soup, cocoa and tea, cookies and sandwiches could be purchased.

There were first-aid posts and gas decontaminating stations about the country, with all kinds of signs and instructions as to how to find them. In London, as well as the usual road ambulances, there is a river emergency service. When London was burning and falling, the ambulances could not get through but the river emergency could get into many places. We spent a very pleasant afternoon with

them visiting many of their ambulance boats, where they put on a demonstration showing how they get people out of difficult situations.

The Home Guard, when it was first formed, was made up of retired officers and men. Invasion was expected at any time and only men with the knowledge of firearms were of value. The evacuation of Dunkirk had just been accomplished and so much material had been left behind. One could go on and on about that valiant body of men who had retired and had come back to help defend their country in its great hour of need. The Women's Voluntary Service under the very able leadership of Lady Reading is another wonderful organization.

There are the hospitals for wounded and sick men and women of the armed forces. Civilian hospitals, doctors and nurses are controlled by the British Ministry of Health. I attended a conference at the Royal College of Nursing. There were nursing representatives from almost all friendly nations. We were asked to talk for two minutes, telling what we were doing in England. I was filled with admiration while listening to nurses from other countries struggling to make themselves understood in English. They were attempting to persuade all young girls from their countries to take up nursing because of the great need there will be for them at home when this war is over, particularly in the public health field. The thing that impressed me most was that they all talked of the time *when* they would return, not *if*. There was no doubt even then but that some day they would return to their homelands.

Transportation became more and more difficult as time went on. Regardless of whether you had a first class or third class ticket when travelling by train, you invariably rode standing up in the corridor. Troops were constantly on the move. If I was ever fortunate enough to find a seat, I would amuse myself by reading the notice over the seat, opposite me, which read, "If the train is attacked, drop to the floor." I would be wondering which of the eight of us would be down first. At all depots we saw signs that read, "Carry your lunch with you." Travel by bus was ideal if you could make a reservation. You could not board a bus unless you had a seat reserved. The buses were comfortable, there was no standing. You saw the country at its best and the driver always stopped where you could get a cup of tea to drink with your sandwiches. There were many bicycles and our staff did very well procuring them. I did not attempt to ride. After these nice wide roads here, I could not get used to the narrower ones over there, which twisted and turned so much. One invariably got caught with a troop convoy of many trucks and motorcycles.

The problem of keeping up the morale of our own group was not too easy to cope with, but it was something we were prepared for before leaving this country, and for that reason we had planned to have a recreation hut that we would encourage all to use, instead of staying in their rooms alone. We had a victrola in the recreation hut and some records of good music and every Sunday night we gathered together there for music and coffee.

Pearl Harbor happened while we were over there and it was not any easier to bear over there than it was right here at home. A number of the nurses wanted to come right back where they felt there must be a lot for them to do.

Over there in winter it gets dark shortly after 4:30 P.M. and does not get light until 9:00 in the morning,

while in summer it is not dark very long.

In July, 1942, our unit was taken over by the United States Army Medical Service and it meant breaking up. Fifty per cent of the nurses joined the Army Nurse Corps and remained at the hospital, sixteen of us returned to the States, while the rest went to London to work for the American Red Cross. Our troops were coming over in larger and larger numbers. Very few of the clubs were ready and there were as yet not many Red Cross workers over there. Those Red Cross clubs are a God-send to the men. Each one is like a little bit of home. There you see coca-cola, coffee, and doughnuts. The men have a happy way of finding out if there is anyone there from their home town. On the wall outside the office hangs a large map of the United States. As the men register they write their name on a piece of paper, put a pin through it, and stick it into their home town on the map, at the same time looking to see if there is anyone else there. The clubs plan recreation for the men, such as sightseeing tours, concerts, dances, et cetera, and then, too, the men are always sure of a bed and a meal at a reasonable price.

We travelled back to the States by United States naval convoy and all the way we had such a feeling of security. Every morning at five o'clock, General Quarters was sounded and every man went to his post for the hour of daybreak. This to watch for submarines that might have caught up with the convoy under cover of night. We had "Abandon Ship" drill every day. General Quarters was sounded and we all went to our state rooms, put on our life jackets, and waited there until we were summoned on deck. We stood alongside the lifeboats to which we had been assigned until one of the ship's officers had inspected us. He not only saw that our life jackets were properly tied, but that we were properly dressed in case we would have to take to small boats. There were one hundred and fifty women and children on board and the tiny tots were most uncomfortable tied up in their life jackets and they voiced their protests loudly. We were treated just like a part of the Navy. Our portholes were not open from the time we left until we arrived in this country. The ship was blacked out at night. We enjoyed movies every night and there was a man on board who knew how to make good American ice cream, and we started eating it shortly after breakfast. We had been at sea a few days when a submarine came up just a hundred yards from our starboard bow. General Quarters sounded and we did as we had been trained to do,—we went to our state rooms, put on our life jackets and while waiting down there could hear the depth charges being dropped. We put on an increase of speed, too. We were conscious for the first time of the vibration of the engines. When the "all-clear" was sounded, we rushed up on deck to see what we could see, but it was all very peaceful. Everything had apparently been taken care of. Before we arrived in New York, one transport was afire and was badly damaged and partly disabled and the passengers were taken off. It was amazing to see with what speed such things are taken care of. That burning ship was immediately taken away from the convoy; it was an ideal time to attract attention of the enemy to our convoy as that smoke undoubtedly would. We were landed at Staten Island and it was with much relief that we found the ever-faithful American Red Cross there to meet and help us. There were trucks and cars to take

us to the depots and a canteen serving coffee, milk and sandwiches, which we needed after the grilling ordeal of passing censor and customs officers. We had a sick nurse who was very yellow from jaundice and it was a great relief to me to have her taken all the way to her home in New Jersey by car, rather than putting her on a train, wondering how she would get along.

I have tried to give you an all-around story of my experiences on a Red Cross Mission, touching only lightly on the many phases, each of which is a story in itself. I feel that I am a very fortunate person in having been allowed to serve in the two World Wars. During the first war I had three and a half years service with the British Army, serving in Malta, Italy and France. Words cannot express what I feel about the American Red Cross. I only know that it is deserving of all the support that we can give it. It is a peace-time, as well as a war-time organization, entirely dependent upon the generosity of the American people. It follows our Army wherever it goes. It is the go-between for our fighting men and their families, giving relief and comfort to both. Its needs are greater now than ever before. Surgical dressings and blood plasma must reach the fighting front in sufficient amounts. We are as much a part of this war as our men who have gone prepared to give their lives, while what we can do and give is small in comparison, but vital. Any able-bodied person can give a pint of blood without cost and it requires very little time, but that blood might be the difference between life and death to some man over there. There are many opportunities for service for volunteers who have time to spare, so let us do what our President says, "Let us back the attack."

REPORT FROM HEADQUARTERS

ANNE M. CAMPBELL

There are several things about the American Association of Nurse Anesthetists which have impressed me since taking up my duties as your Executive Secretary. The first is the devotion of the national officers and trustees, of the state officers and of the committee chairmen and their co-workers to the organization. All of these groups include women who are carrying the responsibility of a full-time job and who, nevertheless, give of their free time so that the work of the national and state organizations may be carried on. There are, no doubt, other devoted members and groups who will come to my attention as I become more familiar with the total membership.

ANNE M. CAMPBELL
Executive Secretary

The importance of being a member of the Association is driven home daily as applications are received at headquarters. Many applicants state that securing a position in anesthesia is contingent upon membership. Others say that when they were appointed it was because they had applied for membership and when the decision is delayed, employers are constantly inquiring about their status. The disappointment of those who fail to qualify gives evidence of the prestige which membership carries.

The committees working on the educational and examination programs are seeking to maintain the high standards which the founders set when the Association was first started. Admission by examination, it is hoped, will make it possible to judge the caliber of the schools in which applicants received their training. The survey of Schools of Anesthesia has been temporarily suspended, due to the war, but the results of the examinations should provide a basis for judging the thoroughness of the schools.

Urgent requests from civilian hospitals for help in securing nurse anesthetists come to the office frequently. The tone of these letters makes me realize the need for nurse anesthetists as well as the high regard that superintendents and administrators of hospitals have for the Association. Since February 17th there have been requests from twelve hospitals for seventeen nurse anesthetists.

Note to State Secretaries

Occasionally, by the time an application has been approved by the State and National Membership Committees, applicants have taken positions out of the state from which they applied. Should we notify you of the acceptance of a candidate who is no longer in your state, will you please notify us, giving any information you may have in regard to the whereabouts of the applicant. This will help us notify the individual promptly. In some instances of this kind applicants have failed to receive notice of their acceptance by the Association.

Gifts to the Library

From Miss Alma Fossum (who died 2-21-44)—copies of the Bulletin
From the California State Association.....$10.00
From the Texas State Association..... 25.00

News from Overseas

2nd Lieut. Jennie Benefiel reports from England that she is having opportunity for a "bit of sight seeing." She will not be very busy until she gets into the field again. She hopes the Association is progressing and that the members in the service are profiting by their varied experiences.

Reports from State Association Meetings

Texas

The Texas Association reports their ninth annual convention held on February 23, in Dallas, with a meeting of the Board of Trustees starting at 7:30 A.M., the opening session at 9 A.M., and the banquet at 7:30 P.M. This indicates a program of more than twelve hours duration for some. This Association voted to buy two $100 war bonds, making a total of six $100 war bonds and it plans to buy two bonds a year for the duration. They also voted to give a bond of the same denomination to Mrs. Jack K. Childress in appreciation of her services as Secretary-Treasurer for the past years.

Illinois

A meeting of the Illinois Association of Nurse Anesthetists was held on March 17th at St. Luke's Hospital, Chicago. The latest film on "Caudal Anesthesia" was shown through the courtesy of Eli Lilly Company. Dr. D. Sanford Hyde, instructor of Obstetrics and Gynecology at Northwestern University, Chicago, then discussed the film and the subject of "Caudal Anesthesia." Dr. Hyde's talk was followed by a social hour and refreshments.

California

The annual meeting of the California Association of Nurse Anesthetists was held at St. Joseph's Hospital, San Francisco, on March 9, 1944.

Officers elected

President
Katherine Graham
159 21st Avenue
San Francisco 21

First Vice-President
Claire Wisner
554 28th Street
Oakland

Second Vice-President
Marjorie Gentle
Mt. Zion Hospital
San Francisco

Secretary-Treasurer
Mary Bell Fusilier
2160 Fell Street
San Francisco 17

Corresponding Secretary
Ruth Diebold
170 Duboce St.
San Francisco 17

Trustees:
3-yr. Mabel Cauthorn
2-yr. Lt. Nell Jane McDonald, A.N.C.
1-yr. Vera Anderson

Pennsylvania

The Pennsylvania Association of Nurse Anesthetists held its thirteenth Annual Convention on April 12th and 13th at Hotel William Penn in Pittsburgh. There were sixty-seven members registered, as well as a number of guests in attendance.

The Association voted to buy three $100 war bonds. They now have eight of this denomination. It was also voted to donate $25.00 to the Red Cross, this sum to be given to the Pittsburgh Chapter.

The following awards were made in the contest for student anesthetists:

First prize—$10, to Naomi Bitz,
subject of paper "Postoperative Parotitis"

Second prize—$5, to Darlene Hackbarth,
subject of paper "The Anesthetist and Neurosurgery"

Both students were from Jewish Hospital, Philadelphia. It was decided to continue the contest.

The first general session was presided over by Irma Massa of Children's Hospital, Pittsburgh. The address of welcome was given by the State President, Helen C. Shaughnessy, Doctors' Hospital, Philadelphia. Anne M. Campbell, Executive Secretary of the American Association of Nurse Anesthetists, was introduced and brought greetings from the national organization. A round table conference followed, at which George J. Thomas, M.D., presided. "Miscellaneous Topics in Anesthesia" was the subject under discussion. Irene A. Shank, M.D., Henry L. Klein, M.D., and Robert L. Patterson, M.D., were the other members of the conference. Questions submitted by the audience were also discussed.

Thursday morning, April 13th, a clinic was held at St. Francis Hospital, conducted by Dr. George J. Thomas. The clinic was followed by a business meeting and luncheon in the Nurses' Residence.

The Thursday afternoon session, presided over by Helen Garvey, St. Francis Hospital, was devoted to the following papers: "Obstetrical Anesthe-

sia and Analgesia" by H. A. Power, M.D., Associate Professor of Obstetrics, University of Pittsburgh, read by Irene A. Shank, M.D., Assistant Director, Department of Anesthesia, Elizabeth Steele Magee Hospital, Pittsburgh. Dr. Robert L. Patterson, Director Department of Anesthesia, Allegheny General Hospital, Pittsburgh, presented a paper on "General Problems in Anesthesia," and Dr. Shank one on "Continuous Caudal Anesthesia." Dr. Henry L. Klein, Director Department of Anesthesia, Western Pennsylvania Hospital, Pittsburgh, and Dr. George J. Thomas, Director Department of Anesthesia, St. Francis Hospital, Pittsburgh, joined with Dr. Shank and Dr. Patterson in the discussion which followed.

The annual banquet of the Hospital Association of Pennsylvania was omitted. In its stead a reception was held in the Pittsburgh Room of the Hotel William Penn. Members of the Pennsylvania Association of Nurse Anesthetists were guests on this pleasant occasion.

Officers

President	Helen C. Shaughnessy Doctors' Hospital Philadelphia
1st Vice-Pres.	Adeline E. Vogt Mercy Hospital, Pittsburgh
Secretary-Treasurer	Helen Young Walker 1824 Wallace Street, Philadelphia
Trustees	Sarah Clark Jackson Irma E. Massa Loretta A. Hough

Report of Secretary

Members in good standing April 1, 1943		274
Members in good standing April 1, 1944		284
Delinquent members:		
April 1, 1943	47	
April 1, 1944	70	
Members transferred to Pennsylvania Association	7	
Members transferred from Pennsylvania Ass'n	9	
New members	32	
Total membership April 1, 1943		321
Total membership April 1, 1944		354
Correspondence sent out (including letters, bills, notice, and membership cards) (previous year 1610 pieces)		1658 pieces
Correspondence received (includes same as above) (previous year 554 pieces)		552 pieces

Report of Treasurer

Balance April 1, 1943		$2080.19
Receipts		
Dues	$1885.00	
Application fees	64.00	
Donation for prize in contest	5.00	
Dues received from American Association for members transferred into state	11.50	
Dues overpaid by members	1.00	
Interest received, Philadelphia Saving Fund Soc'y	20.38	1986.88
		$4067.07
Disbursements		
Remittances to American Association of Nurse Anesthetists:		
Dues	$1261.75	
Application fees	62.00	
Prize awarded in contest	15.00	
Office expenses	70.76	
Fidelity Bond, Secretary-Treasurer	5.00	
Convention expenses	216.35	
Refund to District Association	22.50	
Trust Fund payments	4.50	
Donation, American Red Cross	25.00	
Christmas gifts	15.00	
Central Penn National Bank charges	2.00	1699.86
Balance April 1, 1944		$2367.21
Represented by:		
Balance on deposit, Central Penn National Bank	$ 735.81	
Philadelphia Savings Fund Society	1039.40	
$300 in U. S. Defense Bonds, Series "F," due 5-1-54 — cost	222.00	
$500 in U. S. Defense Bonds, Series "F," due 6-1-55 — cost	370.00	$2367.21

ACTIVITIES OF STATE ASSOCIATIONS

CONFERENCE OF ANESTHETISTS

Sponsored by the Illinois, Indiana, Michigan and Wisconsin State Associations of Nurse Anesthetists

Palmer House, Chicago

Held in conjunction with Tri-State Hospital Assembly

WEDNESDAY, MAY 10

Private Dining Room 17

General Session 2:15 - 4:30 P.M.

Ethel M. Moir, R.N., Detroit: President, Michigan Association of Nurse Anesthetists, Presiding

Call to Order

Mae B. Cameron, Chicago; Chief Anesthetist, Ravenswood Hospital; Chairman, Assembly of Nurse Anesthetists of Illinois, Indiana, Michigan and Wisconsin State Associations.

Greetings from the Tri-State Hospital Assembly

Malcolm T. MacEachern, M.D., Chicago; Associate Director, American College of Surgeons; Chairman, Tri-State Hospital Assembly

Greetings from the Illinois State Association of Nurse Anesthetists

Anna Willenborg, Peoria; President, Illinois Association of Nurse Anesthetists

Greetings from the American Association of Nurse Anesthetists

Anne M. Campbell, Chicago; Executive Secretary

"Refrigeration as the Anesthetic Agent in Amputation of the Lower Extremities" (with moving pictures)

Conrad R. Lam, M.D., Detroit; Division General Surgery, Henry Ford Hospital

"An Adventure in Research" (with slides)

Arno B. Luckhardt, M.D., Chicago; Professor of Physiology, University of Chicago

"Ethyl Chloride in General Anesthesia"

Evelyn Y. Buferd, Detroit; Anesthetist, St. Mary's Hospital

"Nitrous Oxide the Anesthetic of Choice in Dentistry" (with moving pictures)

Julia Baines, Chicago; Dental Anesthetist

BUSINESS MEETING—Indiana Association of Nurse Anesthetists

THURSDAY, MAY 11

Private Dining Room 17

General Session 2:00 - 4:30 P.M.

Pauline Benn, Fort Wayne, President, Indiana Association of Nurse Anesthetists, presiding

"The Nurse Anesthetist in Continuous Caudal Analgesia in Obstetrics" (with moving pictures)
George J. Andros, M.D., Ann Arbor; Instructor in Obstetrics and Gynecology, University of Michigan Medical School

BUSINESS MEETINGS

Tri-State Nurse Anesthetist Assembly
Illinois Association of Nurse Anesthetists—Annual Meeting
Michigan Association of Nurse Anesthetists—Annual Meeting
Wisconsin Association of Nurse Anesthetists—Annual Meeting
(Rooms to be assigned)

FRIDAY, MAY 12

Private Dining Room 17

General Session 2:00 - 4:00 P.M.

Charlotte L. Grams, Milwaukee, Anesthetist, Children's Hospital, presiding

"Anesthesia in the Surgery of Ophthalmology"
A. H. Pember, M.D., F.A.C.S.; Janesville; Pember-Nuzum Clinic

"The Nurse Anesthetist Today and Tomorrow"
Esther E. Edwards, Wausau, Supervisor of Anesthesia, Wausau Memorial Hospital

"Role of the Anesthetist in the Management of the Postoperative Period"
Mary Lou Byrd, M.D., Grand Rapids; Director of Anesthesia and Inhalation Therapy, Butterworth Hospital

"Vinethene and Its Advantages" (with moving pictures)
D. E. Clark, Ph.C., Rahway, New Jersey

MICHIGAN

Michigan anesthetists met February 19, 1944, in the Washington Room, Book - Cadillac Hotel, Detroit, with an attendance of seventy-five. The following papers were given:

"Nitrous Oxide Anesthesia in Thoracoplasty"
by Margaret T. Goode, Herman Kiefer Memorial Hospital, Detroit
(published on pages 59 and 60 this issue)

"My Assignment as a Red Cross Nurse"
by Gertrude Madley, Herman Kiefer Hospital, Detroit
(published on pages 73-81 this issue)

The large and enthusiastic group present discussed the above topics with much interest and at length.

MINNESOTA

At a meeting held October 26, 1943, at Asbury Hospital, Minneapolis, sixteen were present, with Janet Kippen, Ethel Willcutt and Lillian Sedmihradsky as hostesses. Dr. Stanley Maxeiner gave an excellent talk on "Local and Spinal Anesthesia" with slides.

November meeting was held at the Nurses' Club Rooms, Lowry Medical Arts Building, St. Paul, with Mounds Park Hospital anesthetists as hostesses. Lunch was served by Mrs. Ruby Moseley to the fifteen members and guests present. Gusta Vig, Chairman of the Social Committee, reported a profit of $85.80 from the turkey sale before Thanksgiving. The turkey was won by Tillie Stephenson, 604 St. Peter Street, St. Paul. Ruth Walters read a paper on "Curare," and Alice Anderson, who had recently returned from Hawaii, gave an interesting account of her experiences on the Islands.

On January 25th a meeting was held at Eitel Hospital, Minneapolis, with twenty-four present. Following reports of committees, a paper on "Demeral" was read by June Winquist, a student anesthetist, and a paper on "Intravenous Morphine." Lunch was served by Mrs. Straus and Agnes Schwebach.

The attendance was sixteen at the meeting February 29 at Midway Hospital, St. Paul.

At the meeting held at the Minneapolis General Hospital on March 28 the film "Caudal Anesthesia for Obstetrics" was shown. Twenty were present.

The balance in the Treasury April 1st was $374.99.

Dates for the Continuation Course at the University of Minnesota will be announced later.

PROGRAM TENTH ANNUAL MEETING

May 14 - 15, 1944

Saint Paul Hotel, St. Paul

Registration all day — no registration fee

GENERAL SESSION

Sunday, May 14

Palma Anderson, President, presiding

9:30 A.M. Greetings from the Minnesota Hospital Association
The Reverend L. B. Benson

9:45 "Curare in Anesthesia"
Joe W. Baird, M.D.

10:15 "Medical Care — The American Way"
M. W. Alberts, M.D.

10:45 Film — "Uses and Simple Injection Technique of Hypodermic Syringe and Needles"
Becton-Dickinson Company

11:00 Demonstration of Pentothal Sodium Equipment
Hazel J. Peterson, Fairview Hospital, Minneapolis
General Discussion

2:00 P.M. "Important Factors in Intravenous Anesthesia"
Ralph Knight, M.D.

2:30 "Development of Anesthesia Equipment"
J. A. Heidbrink, M.D.

3:00 "Traveling in Denmark
Anne M. Campbell, Executive Secretary
American Association of Nurse Anesthetists

3:45 Business Meeting — Election of Officers —
For members only

4:30 Tea

Monday, May 15

12:30 P.M. Luncheon — All allied groups

2:00 Joint meeting — With Minnesota Hospital Association and allied groups.
Contribution of Minnesota Association of Nurse Anesthetists—"Our National Organization"
Anne M. Campbell

7:00 Annual Banquet

PROGRAM — JOINT MEETING

NEW YORK AND NEW JERSEY

STATE ASSOCIATIONS OF NURSE ANESTHETISTS

Wednesday, May 17, 1944

Academy of Medicine of Northern New Jersey
91 Lincoln Park, Newark, N. J.

11:30 A.M. Luncheon — Academy of Medicine
Hostesses: Mae Stone, Presbyterian Hospital, Newark
Martha Lowery, St. Barnabas Hospital, Newark

12:30 P.M. Registration (fee $1.00)

GENERAL SESSION

Helen White, President New Jersey Association of Nurse Anesthetists, presiding

1:00 Address of Welcome
Frances Hess, President New York Association of Nurse Anesthetists, Director School of Anesthesia, Long Island College Hospital, Brooklyn

Invocation
The Reverend Matthew J. Toohey
Executive Vice-President, St. James' Hospital, Newark

1:30 "Penicillin: Background and Therapeutic Uses"
C. F. Church, M.D., E. R. Squibb & Sons, New York

2:00 BUSINESS MEETING

3:00 "Methods of Rectal Anesthesia"
Anne Dundas Mahon, Knickerbocker Hospital, New York
Discussion
George H. Semkin, M.D., Past Director Surgery, Skin and Cancer Hospital, New York; Consulting Surgeon, Knickerbocker Hospital, New York

3:45 Motion Picture "Science of Inhalation Anesthesia"
Hahnemann Hospital, Philadelphia

4:00 "Vinethene"
Edward Beach, M.D., Director of Anesthesia, Graduate Hospital, Philadelphia
Ralph W. Clark, Ph.D., Merck & Company, Rahway, N. J.

4:30 "The Use of Sodium Pentothal in Major and Minor Surgery"
Amelia Tyler, St. Michael's Hospital, Newark

5:00 "Anesthesia in War"
Captain Charles K. Elder, M.C.
Chief, Department of Anesthesiology, England General Hospital, Atlantic City, N. J.

5:30 Round Table
Frances Hess presiding

7:00 Banquet — Hotel Sheraton, Newark

OREGON

The January, 1944, meeting was held at Portland Sanitarium. Interesting papers on pentothal sodium were read by Jean Fagan and Ruth Schierman, followed by questions and discussion. Following a trio and reading given by members of the Portland Sanitarium Training School, refreshments were served.

WASHINGTON

Regular monthly meetings have been held except in November.

In November, 1943, Sylvia Chapman, President of the Washington Association, visited the Eastern Division in Spokane. Miss Chapman was royally entertained at the Dessert Hotel and at a luncheon by the anesthetists in the beautiful Tea Room at Sacred Heart Hospital. She also visited Deaconess Hospital, St. Luke's and Shriner's Hospital. At the dinner meeting Lt. Commander Murphy of the Farragut Naval Training School at Pend' Oreille Lake, was the guest speaker, on various phases of anesthesia, and his talk was followed by a general discussion.

The Eastern Division meets every other month, and has voted to retain the same officers as last year—

President	June C. Roberts Sacred Heart Hospital, Spokane
Vice-President	Mae D. Butler Sacred Heart Hospital, Spokane
Sec'y-Treasurer	Ragna P. Wigen St. Hospital, Spokane

NEBRASKA

Wilhelmina S. Gulotta writes as follows concerning the appeal for Mrs. Ethel Gilmore Bardin which appeared in the February Bulletin.

"That our girls read the Bulletin closely is proved by the results from our appeal for Mrs. Bardin.

"One touch of sympathy truly makes the whole world kin."

Messages of goodwill and encouragement, by letters or picture postcards, —shamrocks on St. Patrick's Day, Easter bunnies—have poured in on her from nurses and doctors—almost all strangers to her—from nearly half the States in the Union.

You can imagine the powerful stimulus each message brings to her, and how it is starting an absorbing hobby that will bring sunshine into her quiet ward. This was as we hoped and planned."

TEXAS

The ninth annual convention of the Texas Association of Nurse Anesthetists was held February 23, 1944, in Dallas, with a good attendance.

It was decided to assume payment of dues for the coming year for the members serving overseas in the Army Nurse Corps.

Grace Richardson Gatton presided at the opening session; invocation by the Rev. Cicero Fielder, Administrator of Methodist Hospital, Dallas. Address of welcome was given by the Honorable Woodall Rodgers, Mayor of Dallas, followed by greetings from Mr. A. C. Seawell, M.A.C.H.A., President, Texas Hospital Association and Administrator of City-County Hospital, Fort Worth, and from Sister Antonia, F.A.C.H.A., Administrator of St. Paul's Hospital, Dallas, and First Vice-President of the Texas Hospital Association.

A round table was conducted by Ora Lee Mercer of Forth Worth. Dr. Lee Hudson of Dallas was host at the tea. At the banquet held by the Texas Hospital Association the guest speaker was Mr. Frank Walter, F.A.C.H.A., President of the American Hospital Association, and his subject was "The Hospital's Responsibility to the Community."

The following papers were read:

"Spinal Anesthesia"
Jack G. Kerr, M.D., Dallas

"Avertin as a Basic Anesthetic in General Surgery"
Joseph H. McCracken, M.D., Dallas

"Caudal Anesthesia in Obstetrics" (a criticism)
Wayne T. Robinson, M.D., Dallas

"Pre- and Postoperative Treatment of Thyroid Patients"
Ben Harrison, M.D., Dallas

"Future Education of the Nurse Anesthetist"
Alma Webb, Educational Director, School of Anesthesia, Baylor Hospital, Dallas

"Experiences in England and Ireland"
Frank Selecman, M.D., Dallas

"Emergency Anesthesia" (Pearl Harbor)
Captain Mildred I. Clark, A.N.C., Ashburn General Hospital, McKinney, Texas

Officers elected:

President	Gertrude E. Baker Shannon Memorial Hospital, San Angelo
Vice-President	Winifred Hackworth 1317 Pierce St., Houston
Secretary-Treasurer	Mrs. Jack K. Childress 716 W. Avenue G, Temple
Trustees	Laura Hoffman Mitchell Mrs. Jessie Compton Mrs. B. L. Cornell Dorothy M. Hoadley

AMERICAN ASSOCIATION OF NURSE ANESTHETISTS

COMMITTEES

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Anesthesia Records
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Virginia Foley

Examination Program
Miriam Shupp, Chairman
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Present Officers:

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Vice-President	Helen Blanchard 1342 — 15th Street, Troy, New York
Treasurer	Gertrude L. Fife University Hospitals of Cleveland Cleveland 6, Ohio
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FORM OF BEQUEST OR CONTRIBUTION

In response to inquiries reaching the headquarters of the American Association of Nurse Anesthetists the following form is suggested as a proper one to follow:

"I give, devise and bequeath to the American Association of Nurse Anesthetists' Trust Fund the sum of.....
.....dollars, or property or holdings as follows:

All income from the Fund known as the American Association of Nurse Anesthetists' Trust Fund will be used for the aged and indigent nurse anesthetists who qualify for participation in the benefits of said fund as stated in Trust Fund Document.

Signed.....

(Address in full).....

Date..... .....

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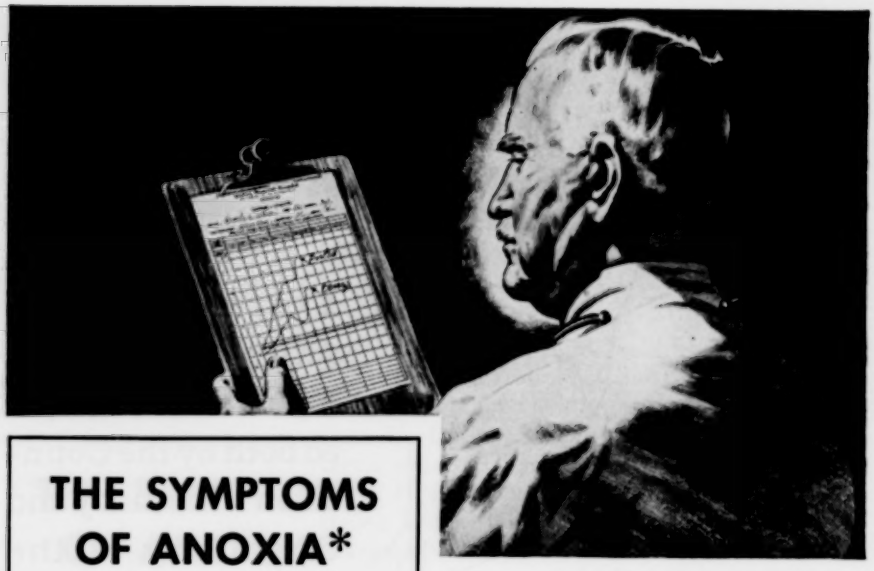

THE SYMPTOMS OF ANOXIA*

Moderate or Mild Anoxia

Cerebral—Headache, restlessness, anxiety, ataxia.

Respiratory — Yawning, sighing, air hunger.

Cardiac—Increased *pulse rate* out of proportion to *fever*, tachycardia.

Gastro-Intestinal—Nausea.

Severe Anoxia

Cerebral—Severe headache, delirium, hyperactivity, stupor, coma.

Respiratory—Dyspnea, rapid, shallow breathing, Cheyne-Stokes respiration, pulmonary edema.

Cardiac—Tachycardia, precordial pain.

Gastro-Intestinal—Nausea, vomiting.

Skin—Bluish cyanosis; or ashen-gray pallor.

*According to recent medical literature.

It will be noted that bluish cyanosis is *only one* of many symptoms of oxygen-want. According to most modern authorities, it is apt to be an unreliable guide, as its appearance depends on the absolute amount of reduced hemoglobin present and hence may never develop in the anemic patient. Instead, this patient may exhibit only an ashen-gray pallor. Clinicians, therefore, place increasing emphasis on recognition of the group of symptoms outlined here in the diagnosis of anoxia.

• • •

Clinical experience has amply demonstrated that, in many disease conditions, anoxia can be prevented, diminished, or eliminated as an undesirable complication by early and adequate employment of oxygen therapy.

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